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REPORT OF THE COMMITTEE OF TEN ON SECONDARY SCHOOL STUDIES ❧ WITH THE REPORTS OF THE CONFERENCES ARRANGED BY THE COMMITTEE

PUBLISHED FOR THE NATIONAL EDUCATIONAL ASSOCIATION BY THE AMERICAN BOOK COMPANY ❧ NEW YORK, CINCINNATI, CHICAGO
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PREFATORY NOTE.

The Report of the Committee of Ten on Secondary School Studies is now generally known among the leading educators of the country, and, while there is much diversity of opinion respecting many of its recommendations, there is substantial agreement that it is the most important educational document ever issued in the United States.

Prepared under the auspices of the National Educational Association, this Report was first published by the Bureau of Education, at Washington, and distributed at public expense to the extent of the funds available for that purpose. In spite of this liberal distribution, many thousands of instructors and educators could not receive a copy from that source.

In view of the importance of the Report, and the increasing demand for copies, the National Educational Association has arranged with the American Book Company to print and publish another edition, and to furnish it at a nominal price, that its beneficial influence may be extended still more widely.

In issuing the new edition, it has been thought best to make certain improvements in the make-up of the book, and to insert an Analytical and Topical Index, by which convenient and instant reference may be had to any subject mentioned in the Report of the Committee, or in those of the nine conferences.

Friends of the Association may be interested to know that any profit which may be derived from the sale of the Report in this form, will accrue to the benefit of the Association, and reimburse, in part, the very considerable expense involved in its preparation.

N. A. CALKINS,
Chairman of Board of Trustees, of
National Educational Association.

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REPORT OF THE COMMITTEE OF TEN

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To the National Council of Education:

The Committee of Ten appointed at the meeting of the National Educational Association at Saratoga on the 9th of July, 1892, have the honor to present the following report: —

At the meeting of the National Council of Education in 1891, a Committee appointed at a previous meeting made a valuable report through their Chairman, Mr. James H. Baker, then Principal of the Denver High School, on the general subject of uniformity in school programmes and in requirements for admission to college. The Committee was continued, and was authorized to procure a Conference on the subject of uniformity during the meeting of the National Council in 1892, the Conference to consist of representatives of leading colleges and secondary schools in different parts of the country. This Conference was duly summoned, and held meetings at Saratoga on July 7th, 8th, and 9th, 1892. There were present between twenty and thirty delegates. Their discussions took a wide range, but resulted in the following specific recommendations, which the Conference sent to the National Council of Education then in session.

1. That it is expedient to hold a conference of school and college teachers of each principal subject which enters into the programmes of secondary schools in the United States and into the requirements for admission to college — as, for example, of Latin, of geometry, or of American history — each conference to consider the proper limits of its subject, the best methods of instruction, the most desirable allotment of time for the subject, and the best methods of testing the pupils' attainments therein, and each conference to represent fairly the different parts of the country.

2. That a Committee be appointed with authority to select the members of these conferences and to arrange their meetings, the results of all the conferences to be reported to this Committee for such action as it may deem appropriate, and to form

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the basis of a report to be presented to the Council by this Committee.

3. That this Committee consist of the following gentlemen:

CHARLES W. ELIOT, President of Harvard University, Cambridge, Mass., *Chairman.*

WILLIAM T. HARRIS, Commissioner of Education, Washington, D. C.

JAMES B. ANGELL, President of the University of Michigan, Ann Arbor, Mich.

JOHN TETLOW, Head Master of the Girls' High School and the Girls' Latin School, Boston, Mass.

JAMES M. TAYLOR, President of Vassar College, Poughkeepsie, N. Y.

OSCAR D. ROBINSON, Principal of the High School, Albany, N. Y.

JAMES H. BAKER, President of the University of Colorado, Boulder, Colo.

RICHARD H. JESSE, President of the University of Missouri, Columbia, Mo.

JAMES C. MACKENZIE, Head Master of the Lawrenceville School, Lawrenceville, N. J.

HENRY C. KING, Professor in Oberlin College, Oberlin, Ohio.

These recommendations of the Conference were adopted by the National Council of Education on the 9th of July; and the Council communicated the recommendations to the Directors of the National Educational Association, with the further recommendation that an appropriation not exceeding $2500 be made by the Association towards the expenses of these conferences. On the 12th of July the Directors adopted a series of resolutions under which a sum not exceeding $2500 was made available for this undertaking during the academic year 1892–93.

Every gentleman named on the above Committee of Ten accepted his appointment; and the Committee met, with every member present, at Columbia College, New York City, from the 9th to the 11th of November, 1892, inclusive.

In preparation for this meeting, a table had been prepared by means of a prolonged correspondence with the principals of selected secondary schools in various parts of the country, which showed the subjects taught in forty leading secondary schools in the United States, and the total number of recitations, or exercises, allotted to each subject. Nearly two hundred schools were applied to for this information; but it did not prove practicable to obtain within three months verified statements from more than forty schools. This table proved conclusively, *first, that the* total number of subjects taught in these

secondary schools was nearly forty, thirteen of which, however, were found in only a few schools; secondly, that many of these subjects were taught for such short periods that little training could be derived from them; and thirdly, that the time allotted to the same subject in the different schools varied widely. Even for the older subjects, like Latin and algebra, there appeared to be a wide diversity of practice with regard to the time allotted to them. Since this table was comparative in its nature,—that is, permitted comparisons to be made between different schools,—and could be easily misunderstood and misapplied by persons who had small acquaintance with school programmes, it was treated as a confidential document; and was issued at first only to the members of the Committee of Ten and the principals of the schools mentioned in the table. Later, it was sent—still as a confidential paper—to the members of the several conferences organized by the Committee of Ten.

The Committee of Ten, after a preliminary discussion on November 9th, decided on November 10th to organize conferences on the following subjects:— 1. Latin; 2. Greek; 3. English; 4. Other Modern Languages; 5. Mathematics; 6. Physics, Astronomy, and Chemistry; 7. Natural History (Biology, including Botany, Zoölogy, and Physiology); 8. History, Civil Government, and Political Economy; 9. Geography (Physical Geography, Geology, and Meteorology). They also decided that each Conference should consist of ten members. They then proceeded to select the members of each of these Conferences, having regard in the selection to the scholarship and experience of the gentlemen named, to the fair division of the members between colleges on the one hand and schools on the other, and to the proper geographical distribution of the total membership. After selecting ninety members for the nine Conferences, the Committee decided on an additional number of names to be used as substitutes for persons originally chosen who should decline to serve, from two to four substitutes being selected for each Conference. In the selection of substitutes the Committee found it difficult to regard the geographical distribution of the persons selected *with as much strictness* as in the original

selection; and, accordingly, when it became necessary to call on a considerable number of substitutes, the accurate geographical distribution of membership was somewhat impaired. The lists of the members of the several Conferences were finally adopted at a meeting of the Committee on November 11th; and the Chairman and Secretary of the Committee were then empowered to fill any vacancies which might occur.

The Committee next adopted the following list of questions as a guide for the discussions of all the Conferences, and directed that the Conferences be called together on the 28th of December: —

1. In the school course of study extending approximately from the age of six years to eighteen years — a course including the periods of both elementary and secondary instruction — at what age should the study which is the subject of the Conference be first introduced?

2. After it is introduced, how many hours a week for how many years should be devoted to it?

3. How many hours a week for how many years should be devoted to it during the last four years of the complete course; that is, during the ordinary high school period?

4. What topics, or parts, of the subject may reasonably be covered during the whole course?

5. What topics, or parts, of the subject may best be reserved for the last four years?

6. In what form and to what extent should the subject enter into college requirements for admission? Such questions as the sufficiency of translation at sight as a test of knowledge of a language, or the superiority of a laboratory examination in a scientific subject to a written examination on a text-book, are intended to be suggested under this head by the phrase "in what form."

7. Should the subject be treated differently for pupils who are going to college, for those who are going to a scientific school, and for those who, presumably, are going to neither?

8. At what stage should this differentiation begin, if any be recommended?

9. Can any description be given of the best method of teaching this subject throughout the school course?

10. Can any description be given of the best mode of testing attain*ments in this subject* at college admission examinations?

11. For those cases in which colleges and universities permit a division of the admission examination into a preliminary and a final examination, separated by at least a year, can the best limit between the preliminary and final examinations be approximately defined?

The Committee further voted that it was expedient that the Conferences on Latin and Greek meet at the same place. Finally, all further questions of detail with regard to the calling and the instruction of the Conferences were referred to the Chairman with full power.

During the ensuing six weeks, the composition of the nine Conferences was determined in accordance with the measures adopted by the Committee of Ten. Seventy persons originally selected by the Committee accepted the invitation of the Committee, and sixty-nine of these persons were present at the meetings of their respective Conferences on the 28th of December. Twenty substitutes accepted service, of whom twelve were persons selected by the Committee of Ten, and eight were selected under the authority granted to the Chairman and Secretary of the Committee in emergencies. One of these eight gentlemen was selected by a Conference at its first meeting. Two gentlemen who accepted service — one of the original members and one substitute — absented themselves from the meetings of their respective Conferences without giving any notice to the Chairman of the Committee of Ten, who was therefore unable to fill their places. With these two exceptions, all the Conferences met on December 28th with full membership.

The places of meeting were as follows: — for the Latin and Greek Conferences, the University of Michigan, Ann Arbor, Mich.; for the English Conference, Vassar College, Poughkeepsie, N. Y.; for the Conference on Other Modern Languages, the Bureau of Education, Washington, D. C.; for the Conference on Mathematics, Harvard University, Cambridge, Mass.; for the Conferences on Physics, Astronomy, and Chemistry, and on Natural History, the University of Chicago, Chicago, Ill.; for the Conference on History, Civil Government, and Political Economy, the University of Wisconsin, Madison, Wis.; *for the Conference on* Geography, the Cook

County Normal School, Englewood, Ill. The Committee of Ten and all the Conferences enjoyed the hospitality of the several institutions at which they met, and the members were made welcome at private houses during the sessions. Through the exertions of Mr. N. A. Calkins, Chairman of the Trustees of the National Educational Association, important reductions of railroad fares were procured for some members of the Committee and of the Conferences; but the reductions obtainable were less numerous and considerable than the National Council of Education had hoped. In filling a few vacancies of which notice was received shortly before December 28th, it was necessary to regard as one qualification nearness of residence to the appointed places of meeting; but on the whole the weight and effectiveness of the several Conferences were not impaired by the necessary replacement of twenty of the members originally selected by the Committee of Ten. The list of the members of the Conferences on the 28th of December was as follows: —

1. LATIN.

Professor CHARLES E. BENNETT, Cornell University, Ithaca, N. Y.
FREDERICK L. BLISS, Principal of the Detroit High School, Detroit, Mich.
JNO. T. BUCHANAN, Principal of the Kansas City High School, Kansas City, Mo.
WILLIAM C. COLLAR, Head Master of the Roxbury Latin School, Roxbury, Mass.
JOHN S. CROMBIE, Principal of the Adelphi Academy, Brooklyn, N. Y.
Professor JAMES H. DILLARD, Tulane University, New Orleans, La.
Rev. WILLIAM GALLAGHER, Principal of Williston Seminary, Easthampton, Mass.
Professor WILLIAM G. HALE, University of Chicago, Chicago, Ill.
Professor JOHN C. ROLFE, University of Michigan, Ann Arbor, Mich.
JULIUS SACHS, Principal of the Collegiate Institute for Boys, 38 West 59th Street, New York City.

2. GREEK.

E. W. COY, Principal of the Hughes High School, Cincinnati, O.
Professor MARTIN L. D'OOGE, University of Michigan, Ann Arbor, Mich.
A. F. FLEET, Superintendent of the Missouri Military Academy, Mexico, Mo.
ASHLEY D. HURT, Head Master of the High School, Tulane University, *New Orleans, La.*

ROBERT D. KEEP, Principal of the Free Academy, Norwich, Conn.
Professor ABBY LEACH, Vassar College, Poughkeepsie, N. Y.
CLIFFORD H. MOORE, Phillips Academy, Andover, Mass.
WILLIAM H. SMILEY, Principal of the High School, Denver, Colo.
Professor CHARLES F. SMITH, Vanderbilt University, Nashville, Tenn.
Professor BENJAMIN I. WHEELER, Cornell University, Ithaca, N. Y.

3. ENGLISH.

Professor EDWARD A. ALLEN, University of Missouri, Columbia, Mo.
F. A. BARBOUR, Michigan State Normal School, Ypsilanti, Mich.
Professor FRANK A. BLACKBURN, University of Chicago, Chicago, Ill.
Professor CORNELIUS B. BRADLEY, University of California, Berkeley, Calif.
Professor FRANCIS B. GUMMERE, Haverford College, Pa.
Professor EDWARD E. HALE, Jr., University of Iowa, Iowa City, Iowa.
Professor GEORGE L. KITTREDGE, Harvard University, Cambridge, Mass.
CHARLES L. LOOS, Jr., High School, Dayton, Ohio.
W. H. MAXWELL, Superintendent of Schools, Brooklyn, N. Y.
SAMUEL THURBER, Master in the Girls' High School, Boston, Mass.

4. OTHER MODERN LANGUAGES.

Professor JOSEPH L. ARMSTRONG, Trinity College, Durham, N. C.
THOMAS B. BRONSON, Lawrenceville School, Lawrenceville, N. J.
Professor ALPHONSE N. VAN DAELL, Massachusetts Institute of Technology, Boston, Mass.
CHARLES H. GRANDGENT, Director of Modern Language Instruction in the Public Schools, Boston, Mass.
Professor CHARLES HARRIS, Oberlin College, Oberlin, Ohio.
WILLIAM T. PECK, High School, Providence, R. I.
Professor SYLVESTER PRIMER, University of Texas, Austin, Texas.
JOHN J. SCHOBINGER, Principal of a Private School for Boys, Chicago, Ill.
ISIDORE H. B. SPIERS, William Penn Charter School, Philadelphia, Pa.
Professor WALTER D. TOY, University of North Carolina, Chapel Hill, N. C.

5. MATHEMATICS.

Professor WILLIAM E. BYERLY, Harvard University, Cambridge, Mass.
Professor FLORIAN CAJORI, Colorado College, Colorado Springs, Colo.
ARTHUR H. CUTLER, Principal of a Private School for Boys, New York City.
Professor HENRY B. FINE, College of New Jersey, Princeton, N. J.
W. A. GREESON, Principal of the High School, Grand Rapids, Mich.
ANDREW INGRAHAM, Swain Free School, New Bedford, Mass.
Professor SIMON NEWCOMB, Johns Hopkins University, and Washington, *D. C.*

Professor GEORGE D. OLDS, Amherst College, Amherst, Mass.
JAMES L. PATTERSON, Lawrenceville School, Lawrenceville, N. J.
Professor T. H. SAFFORD, Williams College, Williamstown, Mass.

6. PHYSICS, ASTRONOMY, AND CHEMISTRY.

Professor BROWN AYERS, Tulane University, New Orleans, La.
IRVING W. FAY, The Belmont School, Belmont, Calif.
ALFRED P. GAGE, English High School, Boston, Mass.
GEORGE WARREN KRALL, Manual Training School, Washington University, St. Louis, Mo.
Professor WILLIAM W. PAYNE, Carleton College, Northfield, Minn.
WILLIAM MCPHERSON, Jr,, 2901 Collinwood Avenue, Toledo, Ohio.
Professor IRA REMSEN, Johns Hopkins University, Baltimore, Md.
Professor JAMES H. SHEPARD, South Dakota Agricultural College, Brookings, So. Dak.
Professor WILLIAM J. WAGGENER, University of Colorado, Boulder, Colo.
GEORGE R. WHITE, Phillips Exeter Academy, Exeter, N. H.

7. NATURAL HISTORY (BIOLOGY, INCLUDING BOTANY, ZOÖLOGY, AND PHYSIOLOGY).

Professor CHARLES E. BESSEY, University of Nebraska, Lincoln, Neb.
ARTHUR C. BOYDEN, Normal School, Bridgewater, Mass.
Professor SAMUEL F. CLARKE, Williams College, Williamstown, Mass.
Professor DOUGLAS H. CAMPBELL, Leland Stanford Jr. University, Palo Alto, Calif.
President JOHN M. COULTER, Indiana University, Bloomington, Ind.
Principal S. A. MERRITT, Helena, Montana.
W. B. POWELL, Superintendent of Schools, Washington, D. C.
CHARLES B. SCOTT, High School, St. Paul, Minn.
Professor ALBERT H. TUTTLE, University of Virginia, Charlottesville, Va.
O. S. WESTCOTT, Principal of the North Division High School, Chicago, Ill.

8. HISTORY, CIVIL GOVERNMENT, AND POLITICAL ECONOMY.

President CHARLES K. ADAMS, University of Wisconsin, Madison, Wis.
Professor EDWARD G. BOURNE, Adelbert College, Cleveland, Ohio.
ABRAM BROWN, Principal of the Central High School, Columbus, Ohio.
Professor A. B. HART, Harvard University, Cambridge, Mass.
RAY GREENE HULING, Principal of the High School, New Bedford, Mass.
Professor JESSE MACY, Iowa College, Grinnell, Iowa.
Professor JAMES HARVEY ROBINSON, University of Pennsylvania, Philadelphia, Pa.
Professor WILLIAM A. SCOTT, University of Wisconsin, Madison, Wis.
HENRY P. WARREN, Head Master of the Albany Academy, Albany, N. Y.
Professor WOODROW WILSON, College of New Jersey, Princeton, N. J.

9. GEOGRAPHY (PHYSICAL GEOGRAPHY, GEOLOGY, AND METEOROLOGY).

Professor THOMAS C. CHAMBERLIN, University of Chicago, Chicago, Ill.
Professor GEORGE L. COLLIE, Beloit College, Beloit, Wis.
Professor W. M. DAVIS, Harvard University, Cambridge, Mass.
DELWIN A. HAMLIN, Master of the Rice Training School, Boston, Mass.
Professor EDWIN J. HOUSTON, Central High School, Philadelphia, Pa.
Professor MARK W. HARRINGTON, The Weather Bureau, Washington, D. C.
CHARLES F. KING, Dearborn School, Boston, Mass.
FRANCIS W. PARKER, Principal of the Cook County Normal School, Englewood, Ill.
G. M. PHILIPS, Principal of the State Normal School, West Chester, Pa.
Professor ISRAEL C. RUSSELL, University of Michigan, Ann Arbor, Mich.

The ninety members of the Conferences were divided as follows, — forty-seven were in the service of colleges or universities, forty-two in the service of schools, and one was a government official formerly in the service of a university. A considerable number of the college men, however, had also had experience in schools. Each Conference, in accordance with a recommendation of the Committee of Ten, chose its own Chairman and Secretary; and these two officers prepared the report of each Conference. Six of the Chairmen were college men, and three were school men; while of the Secretaries, two were college men and seven school men. The Committee of Ten requested that the reports of the Conferences should be sent to their Chairman by the 1st of April, 1893 — three months being thus allowed for the preparation of the reports. Seven Conferences substantially conformed to this request of the Committee; but the reports from the Conferences on Natural History and Geography were delayed until the second week in July. The Committee of Ten, being of course unable to prepare their own report until all the reports of the December Conferences had been received, were prevented from presenting their report, as they had intended, at the Education Congress which met at Chicago July 27th–29th.

All the Conferences sat for three days; their discussions were frank, earnest, and thorough; but in every Conference an extraordinary unity of opinion was arrived at. The nine reports are characterized by an amount of agreement which

quite surpasses the most sanguine anticipations. Only two Conferences present minority reports, namely, the Conference on Physics, Astronomy, and Chemistry, and the Conference on Geography; and in the first case, the dissenting opinions touch only two points in the report of the majority, one of which is unimportant. In the great majority of matters brought before each Conference, the decision of the Conference was unanimous. When one considers the different localities, institutions, professional experiences, and personalities represented in each of the Conferences, the unanimity developed is very striking, and should carry great weight.

Before the 1st of October, 1893, the reports of the Conferences had all been printed, after revision in proof by the chairmen of the Conferences respectively, and had been distributed to the members of the Committee of Ten, together with a preliminary draft of a report for the Committee. With the aid of comments and suggestions received from members of the Committee a second draft of this report was made ready in print to serve as the ground-work of the deliberations of the Committee at their final meeting. This meeting was held at Columbia College from the 8th to the 11th of November, 1893, inclusive, every member being present except Professor King, who is spending the current academic year in Europe. The points of view and the fields of work of the different members of the Committee being fortunately various, the discussions at this prolonged meeting were vigorous and comprehensive, and resulted in a thorough revision of the preliminary report. This third revise having been submitted to the members of the Committee, a cordial agreement on both the form and the substance of the present report, with the exceptions stated in the minority report of President Baker, was arrived at after a correspondence which extended over three weeks. The report itself embodies the numerous votes and resolutions adopted by the Committee.

Professor King, having received in Europe the Conference reports, the two preliminary drafts of the Committee's report, and the third revise, desired to have his name signed to the *final report.*

The Council and the public will doubtless be impressed, at first sight, with the great number and variety of important changes urged by the Conferences: but on a careful reading of the appended reports it will appear that the spirit of the Conferences was distinctly conservative and moderate, although many of their recommendations are of a radical nature. The Conferences which found their tasks the most difficult were the Conferences on Physics, Astronomy, and Chemistry; Natural History; History, Civil Government, and Political Economy; and Geography; and these four Conferences make the longest and most elaborate reports, for the reason that these subjects are to-day more imperfectly dealt with in primary and secondary schools than are the subjects of the first five Conferences. The experts who met to confer together concerning the teaching of the last four subjects in the list of Conferences all felt the need of setting forth in an ample way what ought to be taught, in what order, and by what method. They ardently desired to have their respective subjects made equal to Latin, Greek, and Mathematics in weight and influence in the schools; but they knew that educational tradition was adverse to this desire, and that many teachers and directors of education felt no confidence in these subjects as disciplinary material. Hence the length and elaboration of these reports. In less degree, the Conferences on English and Other Modern Languages felt the same difficulties, these subjects being relatively new as substantial elements in school programmes.

The Committee of Ten requested the Conferences to make their reports and recommendations as specific as possible. This request was generally complied with; but, very naturally, the reports and recommendations are more specific concerning the selection of topics in each subject, the best methods of instruction, and the desirable appliances or apparatus, than concerning the allotment of time to each subject. The allotment of time is a very important matter of administrative detail; but it presents great difficulties, requires a comprehensive survey of the comparative claims of many subjects, and in different parts of the country is necessarily affected by the various local conditions and historical developments. Nevertheless, there will be found in the Conference reports recommendations of a

fundamental and far-reaching character concerning the allotment of programme time to each subject.

It might have been expected that every Conference would have demanded for its subject a larger proportion of time than is now commonly assigned to it in primary and secondary schools; but, as a matter of fact, the reports are noteworthy for their moderation in this respect, — especially the reports on the old and well-established subjects. The Latin Conference declares that, — "In view of the just demand for more and better work in several other subjects of the preparatory course, it seemed clear to the Conference that no increase in the quantity of the preparation in Latin should be asked for." Among the votes passed by the Greek Conference will be noticed the following: — "That in making the following recommendations, this Conference desires that the average age at which pupils now enter college should be lowered rather than raised; and the Conference urges that no addition be made in the advanced requirements in Greek for admission to college." The Mathematical Conference recommends that the course in arithmetic in elementary schools should be abridged, and recommends only a moderate assignment of time to algebra and geometry. The Conference on Geography says of the present assignment of time to geography in primary and and secondary schools that "it is the judgment of the Conference that too much time is given to the subject in proportion to the results secured. It is not their judgment that more time is given to the subject than it merits, but that either more should be accomplished, or less time taken to attain it."

Anyone who reads these nine reports consecutively will be struck with the fact that all these bodies of experts desire to have the elements of their several subjects taught earlier than they now are; and that the Conferences on all the subjects except the languages desire to have given in the elementary schools what may be called perspective views, or broad surveys, of their respective subjects — expecting that in later years of the school course parts of these same subjects will be taken up with more amplitude and detail. The Conferences on Latin, *Greek, and the Modern* Languages agree in desiring to have

the study of foreign languages begin at a much earlier age than now, — the Latin Conference suggesting by a reference to European usage that Latin be begun from three to five years earlier than it commonly is now. The Conference on Mathematics wish to have given in elementary schools not only a general survey of arithmetic, but also the elements of algebra, and concrete geometry in connection with drawing. The Conference on Physics, Chemistry, and Astronomy urge that nature studies should constitute an important part of the elementary school course from the very beginning. The Conference on Natural History wish the elements of botany and zoölogy to be taught in the primary schools. The Conference on History wish the systematic study of history to begin as early as the tenth year of age, and the first two years of study to be devoted to mythology and to biography for the illustration of general history as well as of American history. Finally, the Conference on Geography recommend that the earlier course treat broadly of the earth, its environment and inhabitants, extending freely into fields which in later years of study are recognized as belonging to separate sciences.

In thus claiming entrance for their subjects into the earlier years of school attendance, the Conferences on the newer subjects are only seeking an advantage which the oldest subjects have long possessed. The elements of language, number, and geography have long been imparted to young children. As things now are, the high school teacher finds in the pupils fresh from the grammar schools no foundation of elementary mathematical conceptions outside of arithmetic; no acquaintance with algebraic language; and no accurate knowledge of geometrical forms. As to botany, zoölogy, chemistry, and physics, the minds of pupils entering the high school are ordinarily blank on these subjects. When college professors endeavor to teach chemistry, physics, botany, zoölogy, meteorology, or geology to persons of eighteen or twenty years of age, they discover that in most instances new habits of observing, reflecting, and recording have to be painfully acquired by the students, — habits which they should have acquired in early childhood. The college teacher of history finds in like manner that his subject has never taken

any serious hold on the minds of pupils fresh from the secondary schools. He finds that they have devoted astonishingly little time to the subject; and that they have acquired no habit of historical investigation, or of the comparative examination of different historical narratives concerning the same periods or events. It is inevitable, therefore, that specialists in any one of the subjects which are pursued in the high schools or colleges should earnestly desire that the minds of young children be stored with some of the elementary facts and principles of their subject; and that all the mental habits, which the adult student will surely need, begin to be formed in the child's mind before the age of fourteen. It follows, as a matter of course, that all the Conferences except the Conference on Greek, make strong suggestions concerning the programmes of primary and grammar schools, — generally with some reference to the subsequent programmes of secondary schools. They desire important changes in the elementary grades; and the changes recommended are all in the direction of increasing simultaneously the interest and the substantial training quality of primary and grammar school studies.

If any one feels dismayed at the number and variety of the subjects to be opened to children of tender age, let him observe that while these nine Conferences desire each their own subject to be brought into the courses of elementary schools, they all agree that these different subjects should be correlated and associated one with another by the programme and by the actual teaching. If the nine Conferences had sat all together as a single body, instead of sitting as detached and even isolated bodies, they could not have more forcibly expressed their conviction that every subject recommended for introduction into elementary and secondary schools should help every other; and that the teacher of each single subject should feel responsible for the advancement of the pupils in all subjects, and should distinctly contribute to this advancement.

On one very important question of general policy which affects profoundly the preparation of all school programmes, the Committee of Ten and all the Conferences are absolutely unanimous. Among the questions suggested for discussion in *each Conference were the* following: —

7. Should the subject be treated differently for pupils who are going to college, for those who are going to a scientific school, and for those who, presumably, are going to neither?

8. At what age should this differentiation begin, if any be recommended?

The 7th question is answered unanimously in the negative by the Conferences, and the 8th therefore needs no answer. The Committee of Ten unanimously agree with the Conferences. Ninety-eight teachers, intimately concerned either with the actual work of American secondary schools, or with the results of that work as they appear in students who come to college, unanimously declare that every subject which is taught at all in a secondary school should be taught in the same way and to the same extent to every pupil so long as he pursues it, no matter what the probable destination of the pupil may be, or at what point his education is to cease. Thus, for all pupils who study Latin, or history, or algebra, for example, the allotment of time and the method of instruction in a given school should be the same year by year. Not that all the pupils should pursue every subject for the same number of years; but so long as they do pursue it, they should all be treated alike. It has been a very general custom in American high schools and academies to make up separate courses of study for pupils of supposed different destinations, the proportions of the several studies in the different courses being various. The principle laid down by the Conferences will, if logically carried out, make a great simplification in secondary school programmes. It will lead to each subject's being treated by the school in the same way by the year for all pupils, and this, whether the individual pupil be required to choose between courses which run through several years, or be allowed some choice among subjects year by year.

Persons who read all the appended reports will observe the frequent occurrence of the statement that, in order to introduce the changes recommended, teachers more highly trained will be needed in both the elementary and the secondary schools. There are frequent expressions to the effect that a higher grade of scholarship is needed in teachers of the lower classes, or that the general adoption of some method urged by a Conference

must depend upon the better preparation of teachers in the high schools, model schools, normal schools, or colleges in which they are trained. The experienced principal or superintendent in reading the reports will be apt to say to himself, — "This recommendation is sound, but cannot be carried out without teachers who have received a training superior to that of the teachers now at my command." It must be remembered, in connection with these admissions, or expressions of anxiety, that the Conferences were urged by the Committee of Ten to advise the Committee concerning the best possible — almost the ideal — treatment of each subject taught in a secondary school course, without, however, losing sight of the actual condition of American schools, or pushing their recommendations beyond what might reasonably be considered attainable in a moderate number of years. The Committee believe that the Conferences have carried out wisely the desire of the Committee, in that they have recommended improvements, which, though great and seldom to be made at once and simultaneously, are by no means unattainable. The existing agencies for giving instruction to teachers already in service are numerous; and the normal schools and the colleges are capable of making prompt and successful efforts to supply the better trained and equipped teachers for whom the reports of the Conferences call.

Many recommendations will be found to be made by more than one Conference. Thus, all the Conferences on foreign languages seem to agree that the introduction of two foreign languages in the same year is inexpedient; and all of them insist on practice in reading the foreign language aloud, on the use of good English in translating, and on practice in translating the foreign language at sight, and in writing it. Again, all the Conferences on scientific subjects dwell on laboratory work by the pupils as the best means of instruction, and on the great utility of the genuine laboratory note-book; and they all protest that teachers of science need at least as thorough a special training as teachers of languages or mathematics receive. In reading the reports, many instances will be noticed in which different Conferences have reached similar conclusions without any consultation, or have followed a *common line of thought.*

Your Committee now proceed to give summaries of the most important recommendations made by the Conferences as regards topics and methods, reserving the subject of time-allotment. But in so doing, they desire to say that the reading of these summaries should not absolve anyone interested in the general subject from reading with care the entire report of every Conference. The several reports are so full of suggestions and recommendations concisely and cogently stated that it is impossible to present adequate abstracts of them.

1. LATIN.

An important recommendation of the Latin Conference is the recommendation that the study of Latin be introduced into American schools earlier than it now is. They recommend that translation at sight form a constant and increasing part of the examinations for admission to college and of the work of preparation. They next urge that practice in writing Latin should not be dissociated from practice in reading and translating; but, on the contrary, that the two should be carried on with equal steps. The Conference desire the schools to adopt a greater variety of Latin authors for beginners, and they give good reasons against the exclusive use of Caesar's Gallic War. They object to the common practice of putting the teaching of beginners into the hands of the youngest teachers, who have the slenderest equipment of knowledge and experience. They dwell on the importance of attending to pronunciation and reading aloud, to forms, vocabulary, syntax, and order, and to the means of learning to understand the Latin before translating it; and they describe and urge the importance of a higher ideal in translation than now prevails in secondary schools. The formal recommendations of the Conference, fourteen in number, will be found concisely stated in numbered paragraphs at the close of their report.

2. GREEK.

The Conference on Greek agree with the Conference on Latin in recommending the cultivation of reading at sight in schools, and in recommending that *practice in translation* into the foreign

language should be continued throughout the school course. They urge that three years be the minimum time for the study of Greek in schools; provided that Latin be studied four years. They would not have a pupil begin the study of Greek without a knowledge of the elements of Latin. They recommend the substitution of portions of the Hellenica for two books of the Anabasis in the requirements for admission to college, and the use of some narrative portions of Thucydides in schools. They urge that Homer should continue to be studied in all schools which provide instruction in Greek through three years, and they suggest that the Odyssey is to be preferred to the Iliad. They regret "that so few colleges through their admission examinations encourage reading at sight in schools." Like the Latin Conference, the Greek Conference urge that the reading of the text be constantly practiced by both teacher and pupil, "and that teachers require from their pupils no less intelligent reading of the text than accurate translation of the same." The Greek Conference also adopted a vote "to concur with the Latin Conference as to the age at which the study of Latin should be begun." The specific recommendations of the Conference will be found in brief form in the paragraphs at the head of the eleven numbered sections into which their report is divided.

3. English.

The Conference on English found it necessary to deal with the study of English in schools below the high school grade as well as in the high school. Their opening recommendations deal with the very first years of school, and one of the most interesting and admirable parts of their report relates to English in the primary and the grammar schools.

The Conference are of the opinion that English should be pursued in the high school during the entire course of four years; but in making this recommendation the Conference have in mind both study of literature and training in the expression of thought. To the study of rhetoric they assign one hour a week in the third year of the high school course. To the subject of historical and systematic grammar they assign one hour a week

in the fourth year of the high school course. The intelligent reader of the report of this Conference will find described in it the means by which the study of English in secondary schools is to be made the equal of any other study in disciplinary or developing power. The Conference claim for English as much time as the Latin Conference claim for Latin in secondary schools; and it is clear that they intend that the study shall be in all respects as serious and informing as the study of Latin. One of the most interesting opinions expressed by the Conference is "that the best results in the teaching of English in high schools cannot be secured without the aid given by the study of some other language; and that Latin and German, by reason of their fuller inflectional system, are especially suited to this end." In the case of high schools, as well as in schools of lower grade, the Conference declare that every teacher, whatever his department, should feel responsible for the use of good English on the part of his pupils. In several passages of this report the idea recurs that training in English must go hand in hand with the study of other subjects. Thus the Conference hope for the study of the history and geography of the English-speaking people, so far as these illustrate the development of the English language. They mention that "the extent to which the study of the sources of English words can be carried in any school or class will depend on the acquaintance the pupils possess with Latin, French, and German." They say that the study of words should be so pursued as to illustrate the political, social, intellectual, and religious development of the English race; and they urge that the admission of a student to college should be made to depend largely on his ability to write English, as shown in his examination books on other subjects. It is a fundamental idea in this report that the study of every other subject should contribute to the pupil's training in English; and that the pupil's capacity to write English should be made available, and be developed, in every other department. The very specific recommendations of the Conference as to English requirements for admission to colleges and scientific schools are especially wise and valuable.

4. Other Modern Languages.

The most novel and striking recommendation made by the Conference on Modern Languages is that an elective course in German or French be provided in the grammar school, the instruction to be open to children at about ten years of age. The Conference made this recommendation "in the firm belief that the educational effects of modern language study will be of immense benefit to all who are able to pursue it under proper guidance." They admit that the study of Latin presents the same advantages; but living languages seem to them better adapted to grammar school work. The recommendations of this Conference with regard to the number of lessons a week are specific. They even construct a table showing the time which should be devoted to modern languages in each of the last four years of the elementary schools and in each year of the high school. They plead that "all pupils of the same intelligence and the same degree of maturity be instructed alike, no matter whether they are subsequently to enter a college or scientific school, or intend to pursue their studies no farther." The Conference also state with great precision what in their judgment may be expected of pupils in German and French at the various stages of their progress. An important passage of the report treats of the best way to facilitate the progress of beginners; — pupils should be lifted over hard places; frequent reviews are not to be recommended; new texts stimulate interest and enlarge the vocabulary. Their recommendations concerning translation into English, reading aloud, habituating the ear to the sounds of the foreign language, and translating into the foreign language, closely resemble the recommendations of the Conferences on Latin, Greek, and English regarding the best methods of instruction in those languages. In regard to college requirements, the Conference agree with several other Conferences in stating "that college requirements for admission should coincide with the high school requirements for graduation." Finally, they declare that "the worst obstacle to modern language study is the lack of properly equipped instructors; and that it is the duty of universities, *states, and cities to* provide opportunities for the special *preparation of modern* language teachers."

5. Mathematics.

The form of the report of the Conference on Mathematics differs somewhat from that of the other reports. This report is subdivided under five headings: — 1st, General Conclusions. 2nd, The Teaching of Arithmetic. 3rd, The Teaching of Concrete Geometry. 4th, The Teaching of Algebra. 5th, The Teaching of Formal or Demonstrative Geometry.

The first general conclusion of the Conference was arrived at unanimously. The Conference consisted of one government official and university professor, five professors of mathematics in as many colleges, one principal of a high school, two teachers of mathematics in endowed schools, and one proprietor of a private school for boys. The professional experience of these gentlemen and their several fields of work were various, and they came from widely separated parts of the country; yet they were unanimously of opinion "that a radical change in the teaching of arithmetic was necessary." They recommend "that the course in arithmetic be at once abridged and enriched; abridged by omitting entirely those subjects which perplex and exhaust the pupil without affording any really valuable mental discipline, and enriched by a greater number of exercises in simple calculation, and in the solution of concrete problems." They specify in detail the subjects which they think should be curtailed, or entirely omitted; and they give in their special report on the teaching of arithmetic a full statement of the reasons on which their conclusion is based. They map out a course in arithmetic which, in their judgment, should begin about the age of six years, and be completed at about the thirteenth year of age.

The Conference next recommend that a course of instruction in concrete geometry with numerous exercises be introduced into the grammar schools; and that this instruction should, during the earlier years, be given in connection with drawing. They recommend that the study of systematic algebra should be begun at the age of fourteen; but that, in connection with the study of arithmetic, the pupils should earlier be made familiar with algebraic expressions and symbols, including *the method of solving simple* equations. "The Conference

believe that the study of demonstrative geometry should begin at the end of the first year's study of algebra, and be carried on by the side of algebra for the next two years, occupying about two hours and a half a week." They are also of opinion "that if the introductory course in concrete geometry has been well taught, both plane and solid geometry can be mastered at this time." Most of the improvements in teaching arithmetic which the Conference suggest "can be summed up under the two heads of giving the teaching a more concrete form, and paying more attention to facility and correctness in work. The concrete system should not be confined to principles, but be extended to practical applications in measuring and in physics."

In regard to the teaching of concrete geometry, the Conference urge that while the student's geometrical education should begin in the kindergarten, or at the latest in the primary school, systematic instruction in concrete or experimental geometry should begin at about the age of ten for the average student, and should occupy about one school hour a week for at least three years. From the outset of this course, the pupil should be required to express himself verbally as well as by drawing and modelling. He should learn to estimate by the eye, and to measure with some degree of accuracy, lengths, angular magnitudes, and areas; to make accurate plans from his own measurements and estimates; and to make models of simple geometrical solids. The whole work in concrete geometry will connect itself on the one side with the work in arithmetic, and on the other with elementary instruction in physics. With the study of arithmetic is therefore to be intimately associated the study of algebraic signs and forms, of concrete geometry, and of elementary physics. Here is a striking instance of the interlacing of subjects which seems so desirable to every one of the nine Conferences.

Under the head of teaching algebra, the Conference set forth in detail the method of familiarizing the pupil with the use of algebraic language during the study of arithmetic. This part of the report also deals clearly with the question of the time required for the thorough mastery of algebra through quadratic equations. The report on the teaching of demonstrative geometry is a clear and concise statement of the best method of

teaching this subject. It insists on the importance of elegance and finish in geometrical demonstration, for the reason that the discipline for which geometrical demonstration is to be chiefly prized is a discipline in complete, exact, and logical statement. If slovenliness of expression, or awkwardness of form, is tolerated, this admirable discipline is lost. The Conference therefore recommend an abundance of oral exercises in geometry — for which there is no proper substitute — and the rejection of all demonstrations which are not exact and formally perfect. Indeed throughout all the teaching of mathematics the Conference deem it important that great stress be laid by the teacher on accuracy of statement and elegance of form as well as on clear and rigorous reasoning. Another very important recommendation in this part of the report is to be found in the following passage, — "As soon as the student has acquired the art of rigorous demonstration, his work should cease to be merely receptive. He should begin to devise constructions and demonstrations for himself. Geometry cannot be mastered by reading the demonstrations of a text-book; and while there is no branch of elementary mathematics in which purely receptive work, if continued too long, may lose its interest more completely, there is also none in which independent work can be made more attractive and stimulating." These observations are entirely in accordance with the recent practice of some colleges in setting admission examination papers in geometry which demand of the candidates some capacity to solve new problems, or rather to make new application of familiar principles.

6. Physics, Chemistry, and Astronomy.

The Conference on this subject were urgent that the study of simple natural phenomena be introduced into elementary schools; and it was the sense of the Conference that at least one period a day from the first year of the primary school should be given to such study. Apparently the Conference entertained the opinion that the present teachers in elementary schools are ill prepared to teach children how to observe simple natural phenomena; for their second recommendation was that special science teachers or superintendents be appointed to

instruct the teachers of elementary schools in the methods of teaching natural phenomena. The Conference was clearly of opinion that from the beginning this study should be pursued by the pupil chiefly, though not exclusively, by means of experiments and by practice in the use of simple instruments for making physical measurements. The report dwells repeatedly on the importance of the study of things and phenomena by direct contact. It emphasizes the necessity of a large proportion of laboratory work in the study of physics and chemistry, and advocates the keeping of laboratory note-books by the pupils, and the use of such note-books as part of the test for admission to college. At the same time the report points out that laboratory work must be conjoined with the study of a text-book and with attendance at lectures or demonstrations; and that intelligent direction by a good teacher is as necessary in a laboratory as it is in the ordinary recitation or lecture room. The great utility of the laboratory note-book is emphatically stated. To the objection that the kind of instruction described requires much time and effort on the part of the teacher, the Conference reply that to give good instruction in the sciences requires of the teacher more work than to give good instruction in mathematics or the languages; and that the sooner this fact is recognized by those who have the management of schools the better for all concerned. The science teacher must regularly spend much time in collecting materials, preparing experiments, and keeping collections in order; and this indispensable labor should be allowed for in programmes and salaries. As regards the means of testing the progress of the pupils in physics and chemistry, the Conference were unanimously of opinion that a laboratory examination should always be combined with an oral or written examination, neither test taken singly being sufficient. There was a difference of opinion in the Conference on the question whether physics should precede chemistry, or chemistry physics. The logical order would place physics first; but all the members of the Conference but one advised that chemistry be put first for practical reasons which are stated in the majority report. A sub-committee of the Conference has prepared lists *of experiments in* physics and chemistry for the use of second-

ary schools, — not, of course, as a prescription, but only as a suggestion, and a somewhat precise indication of the topics which the Conference had in mind, and of the limits of the instruction.

7. Natural History.

The Conference on Natural History unanimously agreed that the study of botany and zoölogy ought to be introduced into the primary schools at the very beginning of the school course, and be pursued steadily, with not less than two periods a week, throughout the whole course below the high school. In the next place they agreed that in these early lessons in natural science no text-book should be used; but that the study should constantly be associated with the study of literature, language, and drawing. It was their opinion that the study of physiology should be postponed to the later years of the high school course; but that in the high school, some branch of natural history proper should be pursued every day throughout at least one year. Like the report on Physics, Chemistry, and Astronomy, the report on Natural History emphasizes the absolute necessity of laboratory work by the pupils on plants and animals; and would have careful drawing insisted on from the beginning of the instruction. As the laboratory note-book is recommended by the Conference on Physics, so the Conference on Natural History recommends that the pupils should be made to express themselves clearly and exactly in words, or by drawings, in describing the objects which they observe; and they believe that this practice will be found a valuable aid in training the pupils in the art of expression. They agree with the Conference on Physics, Chemistry, and Astronomy that science examinations should include both a written and a laboratory test, and that the laboratory note-books of the pupils should be produced at the examination. The recommendations of this Conference are therefore very similar to those of the sixth Conference, so far as methods go; but there are appended to the general report of the Conference on Natural History sub-reports which describe the proper topics, the best order of topics, and the right methods of instruction in botany for schools below the high school, and for the high

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school itself, and in zoölogy for the secondary schools. Inasmuch as both the subject matter and the methods of instruction in natural history are much less familiar to ordinary school teachers than the matter and the methods in the languages and mathematics, the Conference believed that descriptive details were necessary in order to give a clear view of the intentions of the Conference. In another sub-report the Conference give their reasons for recommending the postponement to the latest possible time of the study of physiology and hygiene. Like the sixth Conference, the Conference on Natural History protest that no person should be regarded as qualified to teach natural science who has not had special training for this work, — a preparation at least as thorough as that of their fellow teachers of mathematics and the languages.

8. History, Civil Government, and Political Economy.

The Conference on History, Civil Government, and Political Economy had a task different in some respects from those of other Conferences. It is now-a-days admitted that language, natural science, and mathematics should each make a substantial part of education; but the function of history in education is still very imperfectly apprehended. Accordingly, the eighth Conference were at pains to declare their conception of the object of studying history and civil government in schools, and their belief in the efficiency of these studies in training the judgment, and in preparing children for intellectual enjoyments in after years, and for the exercise at maturity of a salutary influence upon national affairs. They believed that the time devoted in schools to history and the allied subjects should be materially increased; and they have therefore presented arguments in favor of that increase. At the same time, they state strongly their conviction that they have recommended "nothing that was not already being done in some good schools, and that might not reasonably be attained wherever there is an efficient system of graded schools." This Conference state quite as strongly as any other their desire to associate the study of their particular subject with that of other subjects which enter into *every school* programme. They declare that the teaching of

history should be intimately connected with the teaching of English; that pupils should be encouraged to avail themselves of their knowledge of ancient and modern languages; and that their study of history should be associated with the study of topography and political geography, and should be supplemented by the study of historical and commercial geography, and the drawing of historical maps. They desire that historical works should be used for reading in schools, and that subjects of English composition should be drawn from the lessons in history. They would have historical poems committed to memory, and the reading of biographies and historical novels encouraged. While they are of opinion that political economy should not be taught in secondary schools, they urge that, in connection with United States history, civil government, and commercial geography, instruction should be given in the most important economic topics. The Conference would therefore have the instruction in history made contributary to the work in three other school departments, namely, English, geography, and drawing. The subject of civil government they would associate with both history and geography. They would introduce it into the grammar school by means of oral lessons, and into the high school by means of a text-book with collateral reading and oral lessons. In the high school they believe that the study of civil government may be made comparative, — that is, that the American method may be compared with foreign systems.

Although the Conference was made up of very diverse elements, every member of the Conference was heartily in favor of every vote adopted. This remarkable unanimity was not obtained by the silence of dissentients, or the withdrawal of opposition on disputed points. It was the natural result of the strong conviction of all the members, that history, when taught by the methods advocated in their report, deserves a position in school programmes which would give it equal dignity and importance with any of the most favored subjects, and that the advantages for all children of the rational study of history ought to be diffused as widely as possible. On one point they made a clearer declaration than any other Conference; although several other Conferences indicate similar

opinions. They declared that their interest was chiefly "in the school children who have no expectation of going to college, the larger number of whom will not even enter a high school," and that their "recommendations are in no way directed to building up the colleges, or increasing the number of college students." Like every other Conference, they felt anxious about the qualifications of the teachers who are to be entrusted with the teaching of history, and they urged that only teachers who have had adequate special training should be employed to teach history and civil government. In their specific recommendations they strongly urge that the historical course be made continuous from year to year, and extend through eight years, and in this respect be placed upon the same footing with other substantial subjects.

The answers of this Conference to the questions contained in the memorandum sent to the Conferences by the Committee of Ten were specific and clear. They will be found in an appendix to the report of the Conference.

In regard to the time to be devoted to history in school programmes, this Conference ask for not less than three periods a week throughout a course of eight years; and they suggest that some of this time can be found by contracting the course in arithmetic, and using for history a part of the time now given to political geography and to language study. Of these eight years they suggest that four should be in the high school and four in the grammar school. They "especially recommend such a choice of subjects as will give pupils in the grammar schools an opportunity of studying the history of other countries, and to the high schools one year's study on the intensive method."

A large portion of the report is necessarily taken up with the description of what the Conference consider the most suitable historical topics and the best methods of teaching history. This portion of the report does not admit of any useful presentation in outline; it must be read in full.

With regard to examinations in history for admission to college, the Conference protest "against the present lax and inefficient system," and seem to sum up their own desires on this subject in the statement that "the requirements for college

ought to be so framed that the methods of teaching best adapted to meet them will also be best for all pupils."

Like the Conferences on scientific subjects the Conference on History insist on note-books, abstracts, special reports, and other written work, as desirable means of teaching. If the recommendations of the nine Conferences should be carried out in grammar and high schools, there would certainly be at least one written exercise a day for every pupil, — a result which persons interested in training children to write English deem it important to accomplish.

The observations of the Conference on geographical training in connection with history are interesting and suggestive, as are also the recurring remarks on the need of proper apparatus for teaching history, such as maps, reference-libraries, historical pictures, and photographs. It is not the natural sciences alone which need school apparatus.

9. Geography.

Considering that geography has been a subject of recognized value in elementary schools for many generations, and that a considerable portion of the whole school time of children has long been devoted to a study called by this name, it is somewhat startling to find that the report of the Conference on Geography deals with more novelties than any other report; exhibits more dissatisfaction with prevailing methods; and makes, on the whole, the most revolutionary suggestions. This Conference had but nine members present at its sessions; and before the final revision of its report had been accomplished, one of the most valued of its members died. Seven members sign the majority report, and the minority report is presented by one member. The dissenting member, however, while protesting against the views of the majority on many points, concurs with the majority in some of the most important conclusions arrived at by the Conference.

It is obvious on even a cursory reading of the majority and minority reports that geography means for all the members of this Conference something entirely different from the term geography as generally used in school programmes. Their definition of the word makes it embrace not only a description

of the surface of the earth, but also the elements of botany, zoölogy, astronomy, and meteorology, as well as many considerations pertaining to commerce, government, and ethnology. "The physical environment of man" expresses as well as any single phrase can the Conference's conception of the principal subject which they wish to have taught. No one can read the reports without perceiving that the advanced instruction in geography which the Conference conceive to be desirable and feasible in high schools cannot be given until the pupils have mastered many of the elementary facts of botany, zoölogy, geometry, and physics. It is noteworthy also that this ninth Conference, like the seventh, dealt avowedly and unreservedly with the whole range of instruction in primary and secondary schools. They did not pretend to treat chiefly instruction in secondary schools, and incidentally instruction in the lower schools; but, on the contrary, grasped at once the whole problem, and described the topics, methods, and apparatus appropriate to the entire course of twelve years. They recognized that complete descriptions would be necessary in all three branches of the subject, — topics, methods, and equipment; and they have given these descriptions with an amplitude and force which leave little to be desired. More distinctly than any other Conference, they recognized that they were presenting an ideal course which could not be carried into effect everywhere or immediately. Indeed at several points they frankly state that the means of carrying out their recommendations are not at present readily accessible; and they exhibit the same anxiety which is felt by several other Conferences about training teachers for the kind of work which the Conference believe to be desirable. After the full and interesting descriptions of the relations and divisions of geographical science, as the Conference define it, the most important sections of their report relate to the methods and means of presenting the subject in schools, and to the right order in developing it. The methods which they advocate require not only better equipped teachers, but better means of illustrating geographical facts in the schoolroom, such as charts, maps, globes, photographs, models, lantern slides, and lanterns. Like all the other Conferences on scientific subjects, the ninth Conference dwell on the im-

portance of forming from the start good habits of observing correctly and stating accurately the facts observed. They also wish that the instruction in geography may be connected with the instruction in drawing, history, and English. They believe that meteorology may be taught as an observational study in the earliest years of the grammar school, the scholars being even then made familiar with the use of the thermometer, the wind-vane, and the rain-gauge; and that it may be carried much farther in the high school years, after physics has been studied, so that the pupils may then attain a general understanding of topographical maps, of pressure and wind charts, of isothermal charts, and of such complicated subjects as weather prediction, rainfall and the distribution of rain, storms, and the seasonal variations of the atmosphere. Their conception of physiography is a very comprehensive one. In short, they recommend a study of physical geography which would embrace in its scope the elements of half-a-dozen natural sciences, and would bind together in one sheaf the various gleanings which the pupils would have gathered from widely separated fields. There can be no doubt that the study would be interesting, informing, and developing, or that it would be difficult and in every sense substantial.

It already appears that the nine Conferences have attended carefully to three out of the five subjects which it was the intention of the National Council of Education that they should examine. They have discussed fully the proper limits of the several subjects of instruction in secondary schools, the best methods of instruction, and the best methods of testing pupils' attainments. The Conferences were equally faithful in discussing the other two subjects committed to them by the Council, namely, the most desirable allotment of time for each subject, and the requirements for admission to college.

The next subject which the Committee of Ten, following the guidance of the Conferences, desire to present to the Council is, therefore, the allotment of school time among the various subjects of study. It is the obvious duty of the Committee, in the first place, to group together in tabular form the numerous *suggestions on this subject* made by the Conferences.

TABLE I.

SUBJECT.	ELEMENTARY GRADES. — PRIMARY AND GRAMMAR SCHOOL.								SECONDARY SCHOOL. — HIGH SCHOOL OR ACADEMY.			
	1st Year. Age. 6–7.	2d Year. 7–8.	3d Year. 8–9.	4th Year. 9–10.	5th Year. 10–11.	6th Year. 11–12.	7th Year. 12–13.	8th Year. 13–14.	9th Year. 14–15.	10th Year. 15–16.	11th Year. 16–17.	12th Year. 17–18.
1. LATIN.					Reasons given for beginning Latin earlier than is now the custom.				5 p. a wk.	5 p. a wk.	5 p. a wk.	5 p. a wk.
2. GREEK.							Latin to be begun a year before Greek.		5 p. a wk.	4 p. a wk.	4 p. a wk.	
3. ENGLISH.	Pupils to reproduce orally stories told them, to invent stories and describe objects.		Supplementary reading begun — and continued through all the grades. Composition begun — writing narratives and descriptions — oral and written exercises on forms and the sentence.				From this grade no reader to be used.	Grammar, 3 p. a wk.	Literature, 3 p. a wk. Composition, 2 p. a wk.	Literature, 3 p. a wk. Composition, 2 p. a wk.	Literature, 3 p. a wk. Composition, 1 p. a wk. Rhetoric, 1 p. a wk.	Literature, 3 p. a wk. Composition, 1 p. a wk. Grammar, 1 p. a wk.
4. MODERN LANGUAGES.					Elective German or French, 5 p. a wk.	Elective German or French, 4 p. a wk.	Elective German or French, 3 p. a wk. at least.	Elective German or French, 3 p. a wk. at least.	The language begun below, 4 p. a wk.	The same language, 4 p. a wk. Second language, 4 p. a wk.	The same language, 4 p. a wk. Second language, 4 p. a wk.	The same language, 4 p. a wk. Second language, 4 p. a wk.

5. Mathematics.	Arithmetic during first eight years, with algebraic expressions and symbols and simple equations — no specific number of hours being recommended.	Concrete Geometry, 1 p. a wk.	Concrete Geometry, 1 p. a wk.	Concrete Geometry, 1 p. a wk.	Concrete Geometry, 1 p. a wk.	Algebra, 5 p. a wk.	Algebra or Book-keeping and Commercial Arithmetic, 2½ p. a wk. Geometry, 2½ p. a wk.	Algebra or Book-keeping and Commercial Arithmetic, 2½ p. a wk. Geometry, 2½ p. a wk.	Trigonometry and higher Algebra for candidates for scientific schools.
6. Physics, Chemistry, and Astronomy.	Study of natural phenomena 5 p. a wk. through first eight years by experiments, including physical measurements and the recommendations of Conferences 7 and 9.					Elective Astronomy, 5 p. a wk. 12 wks.		Chemistry, 5 p. a wk.	Physics, 5 p. a wk.
7. Nat. History.	Through first eight years 2 p. a wk., of not less than 30 minutes each, devoted to plants and animals; the instruction to be correlated with language, drawing, literature, and geography.					One yr. (which yr. not specified) 5 p. a wk. for botany or zoölogy. Half-yr. (late in course) anatomy, physiology, and hygiene, 5 p. a wk.			
8. History.				Biography & Mythology, 3 p. wk.	American History and elements of civil government, 3 p. a wk.	Greek and Roman History, 3 p. a wk.	French History, 3 p. a wk.	English History, 3 p. a wk.	American History, 3 p. a wk.	A special period intensively, and civil government, 3 p. a wk.
9. Geography.	Time alloted in first eight years to equal that given to number work. The subject — the earth, its environment and inhabitants, including the elements of astronomy, meteorology, zoölogy, botany, history, commerce, races, religions, and governments.					Physical Geography.	(Physiography, geology, or meteorology at some part of the high school course. Possibly more than one of these where election is allowed.)		Elective Meteorology, ½ this year or next.	Elective geology or physiography, ½ yr.

Abbreviations: p. = a recitation period of 40–45 minutes; wk. = week; yr. = year.

Having exhibited the programme-time suggestions of the Conferences, it will remain for the Committee to construct a flexible and comprehensive schedule of studies, based on the recommendations of the Conferences.

The preceding table exhibits the demands for programme time made by all the Conferences. It will be seen at once that this table does not yield, without modification, a practical programme. The nine Conferences acted separately, and were studying each its own needs, and not the comparative needs of all the subjects. It was not for them to balance the different interests, but for each to present strongly one interest. It will further be noticed that some of their demands are not specific, — that is, they do not call for any specified number of recitation periods for a definite number of weeks during a stated number of years. The Conferences on Languages and History are the most definite in their recommendations, the Conferences on Mathematics and the Sciences being much less definite. Table I. is therefore not a programme, but the materials from which serviceable programmes may be construc ed.

The Committee of Ten deliberately placed in this one table the recommendations of the Conferences for the elementary grades and the recommendations for secondary schools, in order that the sequence of the recommendations for each subject might be clearly brought out. The recommendations made for the secondary schools presuppose in many cases that the recommendations made for the elementary schools have been fulfilled; or, at least, in many cases the Conferences would have made different recommendations for the secondary schools, if they had been compelled to act on the assumption that things must remain just as they are in the elementary schools.

At this point it is well to call attention to the list of subjects which the Conferences deal with as proper for secondary schools. They are: 1. languages — Latin, Greek, English, German, and French, (and locally Spanish); 2. mathematics — algebra, geometry, and trigonometry; 3. general history, and the intensive study of special epochs; 4. natural history — including descriptive astronomy, meteorology, botany, zoölogy, physiology, geology, and ethnology, most of which subjects *may be conveniently* grouped under the title of physical

geography; and 5. physics and chemistry. The Committee of Ten assent to this list, both for what it includes and for what it excludes, with some practical qualifications to be mentioned below.

Table II. exhibits the total amount of instruction (estimated by the number of weekly periods assigned to each subject) to be given in a secondary school during each year of a four years' course, on the supposition that the recommendations of the Conferences are all carried out.

Table II.

1st Secondary School Year.

Latin	5 p.
English Literature, 3 p. / " Composition, 2 p.	5 p.
German or French	4 p.
Algebra	5 p.
History	3 p.
	22 p.

2nd Secondary School Year.

Latin	5 p.
Greek	5 p.
English Literature, 3 p. / " Composition, 2 p.	5 p.
German	4 p.
French	4 p.
Algebra,* 2½ p. / Geometry, 2½ p.	5 p.
Astronomy (12 weeks)	5 p.
Botany or Zoölogy	5 p.
History	3 p.
	37½ p.

* Option of book-keeping and commercial arithmetic.

3rd Secondary School Year.

Latin	5 p.
Greek	4 p.
English Literature, 3 p. / " Composition, 1 p. / Rhetoric, 1 p.	5 p.
German	4 p.
French	4 p.
Algebra*	2½ p.
Geometry	2½ p.
Chemistry	5 p.
History	3 p.
	35 p.

* Option of book-keeping and commercial arithmetic.

4th Secondary School Year.

Latin	5 p.
Greek	4 p.
English Literature, 3 p. / " Composition, 1 p. / " Grammar, 1 p.	5 p.
German	4 p.
French	4 p.
Trigonometry, 2 p. ½ yr. / Higher Algebra, 2 p. ½ yr.	2 p.
Physics	5 p.
Anatomy, Physiology, and Hygiene, ½ yr.	5 p.
History	3 p.
Geol. or Physiography, 3 p. ½ yr. / Meteorology, 3 p. ½ yr.	3 p.
	37½ p.

The method of estimating the amount of instruction offered in any subject by the number of recitation periods assigned to it each week for a given number of years or half years is in some respects an inadequate one, for it takes no account of the scope and intensity of the instruction given during the periods; but so far as it goes, it is trustworthy and instructive. It represents with tolerable accuracy the proportional expenditure which a school is making on a given subject, and therefore the proportional importance which the school attaches to that subject. It also represents roughly the proportion of the pupil's entire school time which he can devote to a given subject, provided he is free to take all the instruction offered in that subject. All experience shows that subjects deemed important get a large number of weekly periods, while those deemed unimportant get a small number. Moreover, if the programme time assigned to a given subject be insufficient, the value of that subject as training cannot be got, no matter how good the quality of the instruction.

Every one of these years, except the first, contains much more instruction than any one pupil can follow; but, looking at the bearing of the table on the important question of educational expenditure, it is encouraging to observe that there are already many secondary schools in this country in which quite as many subjects are taught as are mentioned in this table, and in which there are more weekly periods of instruction provided for separate classes than are found in any year of the table. In some urban high schools which provide from five to nine different courses of three to five years each, and in some endowed secondary schools which maintain two or three separate courses called Classical, Latin-scientific, and English, or designated by similar titles, the total number of weekly periods of unrepeated instruction given to distinct classes is even now larger than the largest total of weekly periods found in Table II. The annual expenditure in such schools is sufficient to provide all the instruction called for by Table II. The suggestions of the Conferences presuppose that all the pupils of like intelligence and maturity in any subject study it in the same way and to the same extent, so long as *they study it at all*, — this being a point on which all the

Conferences insist strongly. No provision is made, therefore, for teaching Latin, or algebra, or history to one portion of a class four times a week, and to another portion of the same class only thrice or twice a week. Such provisions are very common in American schools; but the recommendations of the Conferences, if put into effect, would do away with all expenditures of this sort.

It clearly appears from Table II. that the recommendations of the Conferences on scientific subjects have been moderate so far as the proposed allotment of time to them is concerned. The Conferences on Physics, Chemistry and Astronomy, Natural History, and Geography held one combined session in Chicago, and passed a resolution that one-fourth of the whole high school course ought to be devoted to natural science, their intention doubtless being that each pupil should devote one quarter of his time to science; yet if all the time asked for in secondary schools by the scientific Conferences be added together, it will appear, first, that the rare pupil who should take all the scientific instruction provided would need for it only one quarter of his time, and secondly, that less than one-sixth of the whole instruction to be given in accordance with the combined recommendations of all the Conferences is devoted to subjects of natural science. The first year of the secondary school course according to Table II. will contain no science at all; and it is only in the last year of the secondary school that the proportion of natural science teaching rises to one-fourth of the whole instruction.

In studying these two tables which result from the recommendations of the Conferences, the Committee of Ten perceived at once, that if the recommendations are to be carried out, so far as offering the instruction proposed is concerned, a selection of studies for the individual pupil must be made in the second, third, and fourth years of the secondary school course. This selection will obviously be made in different ways in different schools. Any school principal may say, — "With the staff at my command I can teach only five subjects out of those proposed by the Conferences in the manner proposed. My school shall therefore be limited to these five." Another school may be able to teach in *the thorough manner* proposed five subjects, but

some or all of these five may be different from those selected by the first school. A larger or richer school may be able to teach all the subjects mentioned, and by the methods and with the apparatus described. In the last case, each pupil, under the supervision of the teachers, and with the advice of parents or friends, may make choice between several different four-years' courses arranged by the school; or, if the school authorities prefer, the pupil may be allowed to make year by year a carefully guided choice among a limited number of subjects; or these two methods may be combined. Selection for the individual is necessary to thoroughness, and to the imparting of power as distinguished from information; for any large subject whatever, to yield its training value, must be pursued through several years and be studied from three to five times a week, and if each subject studied is thus to claim a considerable fraction of the pupil's school time, then clearly the individual pupil can give attention to only a moderate number of subjects.

In Table II. the number of weekly periods assigned to a single subject varies from two to five, about half of the assignments being made for five periods a week. There is an obvious convenience in the number five because it ordinarily gives one period a day for five days in the week; but there is also an obvious disadvantage in making too free use of the number five. It practically limits to three or, at most, four, the number of subjects which the individual pupil may pursue simultaneously; and this limit is inexpedient in a four years' programme.

The Committee have therefore prepared the following modification of Table II., using four as the standard number of weekly periods, except in the first year of a new language, and in the few cases in which the Conferences advise a number smaller than four. By this means the total number of periods is somewhat reduced, except in the first year, and the numbers of periods allotted to different subjects are made more consonant, each with the others. The result is only a correlation and adjustment of the recommendations of the Conferences, no judgment or recommendation of the Committee being expressed *in it.*

TABLE III.

1ST SECONDARY SCHOOL YEAR.

Latin	5 p.
English Literature, 2 p. / " Composition, 2 p.	4 p.
German [or French]	5 p.
Algebra	4 p.
History of Italy, Spain, and France	3 p.
Applied Geography (European political — continental and oceanic flora and fauna)	4 p.
	25 p.

2ND SECONDARY SCHOOL YEAR.

Latin	4 p.
Greek	5 p.
English Literature, 2 p. / " Composition, 2 p.	4 p.
German, continued	4 p.
French, begun	5 p.
Algebra,* 2 p. / Geometry, 2 p.	4 p.
Botany or Zoölogy	4 p.
English History to 1688	3 p.
	33 p.

* Option of book-keeping and commercial arithmetic.

3RD SECONDARY SCHOOL YEAR.

Latin	4 p.
Greek	4 p.
English Literature, 2 p. / " Composition, 1 p. / Rhetoric, 1 p.	4 p.
German	4 p.
French	4 p.
Algebra,* 2 p. / Geometry, 2 p.	4 p.
Physics	4 p.
History, English and American	3 p.
Astronomy, 3 p. 1st ½ yr. / Meteorology, 3 p. 2nd ½ yr.	3 p.
	34 p.

* Option of book-keeping and commercial arithmetic.

4TH SECONDARY SCHOOL YEAR.

Latin	4 p.
Greek	4 p.
English Literature, 2 p. / " Composition, 1 p. / " Grammar, 1 p.	4 p.
German	4 p.
French	4 p.
Trigonometry, / Higher Algebra,	2 p.
Chemistry	4 p.
History (intensive) and Civil Government	3 p.
Geology or Physiography, 4 p. 1st ½ yr. / Anatomy, Physiology, and Hygiene, 4 p. 2nd ½ yr.	4 p.
	33 p.

The adoption of the number four as the standard number of weekly periods will not make it impossible to carry into effect the fundamental conception of all the Conferences, namely, — that all the subjects which make part of the secondary school course should be taught consecutively enough and extensively enough to make every subject yield that training which it is best fitted to yield, — provided that the proposed correlation and association of subjects are carried out in practice. With regard to the arrangement or sequence of subjects, the Committee follow in this table the recommendations of the Conferences with only slight modifications. They insert in the first year applied geography, using the term in the sense in which it is used *by the Conference on* Geography; and they

make this insertion in order that natural science may be represented in the programme of that year, and that a complete break of continuity, as regards science subjects, between the eighth grade and the second year of the secondary school may be avoided. They have felt obliged to put physics into the third year, and chemistry into the fourth, in order that the subject of physics may precede meteorology and physiography; and they have slightly increased the number of lessons in astronomy. With regard to the proportions of school time to be devoted to the different subjects, Table III. reduces somewhat the proportional time devoted to Latin, English, and mathematics, and increases the proportional time to be devoted to natural science. In a secondary school which teaches all the subjects recommended by the Conferences, and to the extent contemplated in Table III., nearly one-fifth of the whole instruction given will be devoted to natural science.

The Committee regard Table III. not, of course, as a feasible programme, but as the possible source of a great variety of good secondary school programmes. It would be difficult to make a bad programme out of the materials contained in this table, unless indeed the fundamental principles advocated by the Conferences should be neglected. With some reference to Table I., excellent six years' and five years' programmes for secondary schools can readily be constructed by spreading the subjects contained in Table III. over six or five years instead of four, — of course with some changes in the time-allotment.

The details of the time-allotment for the several studies which enter into the secondary school programme may seem to some persons mechanical, or even trivial — a technical matter to be dealt with by each superintendent of schools, or by each principal of a secondary school, acting on his own individual experience and judgment; but such is not the opinion of the Committee of Ten. The Committee believe that to establish just proportions between the several subjects, or groups of allied subjects, on which the Conferences were held, it is essential that each principal subject shall be taught thoroughly and extensively, and therefore for an adequate number of periods a week on the school programme. If twice as much time is given in a school to Latin as is given to mathematics,

the attainments of the pupils in Latin ought to be twice as great as they are in mathematics, provided that equally good work is done in the two subjects; and Latin will have twice the educational value of mathematics. Again, if in a secondary school Latin is steadily pursued for four years with four or five hours a week devoted to it, that subject will be worth more to the pupil than the sum of half a dozen other subjects, each of which has one sixth of the time allotted to Latin. The good effects of continuous study in one subject will be won for the pupil through the Latin, and they will not be won through the six other subjects among which only so much time as is devoted to the single language has been divided. If every subject studied at all is to be studied thoroughly and consecutively, every subject must receive an adequate time-allotment. If every subject is to provide a substantial mental training, it must have a time-allotment sufficient to produce that fruit. Finally, since selection must be exercised by or on behalf of the individual pupil, all the subjects between which choice is allowed should be approximately equivalent to each other in seriousness, dignity, and efficacy. Therefore they should have approximately equal time-allotments. The Conferences have abundantly shown how every subject which they recommend can be made a serious subject of instruction, well fitted to train the pupil's powers of observation, expression, and reasoning. It remains for makers of school programmes to give every subject the chance of developing a good training capacity by giving it an adequate time-allotment.

The schedule of studies contained in Table III. permits flexibility and variety in three respects. First, it is not necessary that any school should teach all the subjects which it contains, or any particular set of subjects. Secondly, it is not necessary that the individual pupil should everywhere and always have the same number of periods of instruction per week. In one school the pupils might have but sixteen periods a week, in another twenty; or in some years of the course the pupils might have more periods a week than in other years. Within the schedule many particular arrangements for the convenience of a school, or for the welfare of an individual pupil would be possible. Thirdly, it is not necessary that every secondary school should

begin its work at the level which is assumed as the starting point of secondary instruction in Tables I., II., and III. If in any community the high school has no such grammar school foundation beneath it as is imagined in Table I. it will simply have to begin its work lower down in the table. The sequence of studies recommended by the Conferences would still serve as a guide; but the demarcation between the elementary schools and the high school would occur in that community at a lower point. From this point of view, Tables I., II., and III. may be considered to set a standard towards which secondary schools should tend; and not a standard to which they can at once conform.

The adoption of a programme based on Table III. would not necessarily change at all the relation of a school to the colleges or universities to which it habitually sends pupils. Any such programme would lend itself either to the examination method of admission to college, or to the certificate method; and it could be slightly modified in such a way as to meet the present admission requirements of any college in the country. Future changes in admission requirements might fairly be made with a view to the capabilities of programmes based on Table III.

As samples of school programmes constructed within the schedules of Table III., the Committee present the following working programmes, which they recommend for trial wherever the secondary school period is limited to four years. All four combined might, of course, be tabulated as one programme with options by subject.

These four programmes taken together use all the subjects mentioned in Table III., and usually, but not always, to about the amounts there indicated. History and English suffer serious contraction in the Classical programme. All four programmes conform to the general recommendations of the Conferences, that is, — they treat each subject in the same way for all pupils with trifling exceptions; they give time enough to each subject to win from it the kind of mental training it is fitted to supply; they put the different principal subjects on an approximate equality so far as time-allotment is concerned; they omit all short information courses; and they *make sufficiently continuous* the instruction in each of the main

lines, namely, language, science, history and mathematics. With slight modifications, they would prepare the pupils for admission to appropriate courses in any American college or university on the existing requirements; and they would also meet the new college requirements which are suggested below.

In preparing these programmes, the Committee were perfectly aware that it is impossible to make a satisfactory secondary school programme, limited to a period of four years, and founded on the present elementary school subjects and methods. In the opinion of the Committee, several subjects now reserved for high schools, — such as algebra, geometry, natural science, and foreign languages, — should be begun earlier than now, and therefore within the schools classified as elementary; or, as an alternative, the secondary school period should be made to begin two years earlier than at present, leaving six years instead of eight for the elementary school period. Under the present organization, elementary subjects and elementary methods are, in the judgment of the Committee, kept in use too long.

The most striking differences in the four programmes will be found, as is intimated in the headings, in the relative amounts of time given to foreign languages. In the Classical programme the foreign languages get a large share of time; in the English programme a small share. In compensation, English and history are more developed in the English programme than in the Classical.

Many teachers will say, at first sight, that physics comes too early in these programmes and Greek too late. One member of the Committee is firmly of the opinion that Greek comes too late. The explanation of the positions assigned to these subjects is that the Committee of Ten attached great importance to two general principles in programme making: — In the first place they endeavored to postpone till the third year the grave choice between the Classical course and the Latin-Scientific. They believed that this bifurcation should occur as late as possible, since the choice between these two roads often determines for life the youth's career. Moreover, they believed that it is possible to make this important decision for a boy on good grounds, only *when he has had opportunity* to exhibit his quality and

iscover his tastes by making excursions into all the principal ields of knowledge. The youth who has never studied any out his native language cannot know his own capacity for linguistic acquisition; and the youth who has never made a chemical or physical experiment cannot know whether or not

TABLE IV.

YEAR.	CLASSICAL. Three foreign languages (one modern).	LATIN-SCIENTIFIC. Two foreign languages (one modern).
I.	Latin . . . . . 5 p. English . . . . . 4 p. Algebra . . . . . 4 p. History . . . . . 4 p. Physical Geography . . . . . 3 p. 20 p.	Latin . . . . . 5 p. English . . . . . 4 p. Algebra . . . . . 4 p. History . . . . . 4 p. Physical Geography . . . . . 3 p. 20 p.
II.	Latin . . . . . 5 p. English . . . . . 2 p. *German [*or* French] begun . . . 4 p. Geometry . . . . . 3 p. Physics . . . . . 3 p. History . . . . . 3 p. 20 p.	Latin . . . . . 5 p. English . . . . . 2 p. German [*or* French] begun . . . . 4 p. Geometry . . . . . 3 p. Physics . . . . . 3 p. Botany or Zoölogy . . . . . 3 p. 20 p.
III.	Latin . . . . . 4 p. *Greek . . . . . 5 p. English . . . . . 3 p. German [*or* French] . . . . . 4 p. Mathematics { Algebra 2 / Geometry 2 } . . . 4 p. 20 p.	Latin . . . . . 4 p. English . . . . . 3 p. German [*or* French] . . . . . 4 p. Mathematics { Algebra 2 / Geometry 2 } . . . 4 p. Astronomy ½ yr. & Meteorology ½ yr. 3 p. History . . . . . 2 p. 20 p.
IV.	Latin . . . . . 4 p. Greek . . . . . 5 p. English . . . . . 2 p. German [*or* French] . . . . . 3 p. Chemistry . . . . . 3 p. Trigonometry & Higher Algebra / *or* / History . . . 3 p. 20 p.	Latin . . . . . 4 p. English { as in Classical 2 / additional 2 } . . . . 4 p. German [*or* French] . . . . . 3 p. Chemistry . . . . . 3 p. Trigonometry & Higher Algebra / *or* / History 3 p Geology or Physiography ½ yr. / and / Anatomy, Physiology, & Hygiene ½ yr. 3 20

* In any school in which Greek can be better taught than a modern language, or in v local public opinion or the history of the school makes it desirable to teach Greek in an *way, Greek may* be substituted for German or French in the second year of the Cl *programme.*

he has a taste for exact science. The wisest teacher, or the most observant parent, can hardly predict with confidence a boy's gift for a subject which he has never touched. In these considerations the Committee found strong reasons for postponing bifurcation, and making the subjects of the first two

TABLE IV. (*continued*).

YEAR.	MODERN LANGUAGES. Two foreign languages (both modern).	ENGLISH. One foreign language (ancient or modern).
I.	French [*or* German] begun . . . . 5 p. English . . . . . 4 p. Algebra . . . . . 4 p. History . . . . . 4 p. Physical Geography . . . . . 3 p. 20 p.	Latin, or German, or French . . . 5 p. English . . . . . 4 p. Algebra . . . . . 4 p. History . . . . . 4 p. Physical Geography . . . . . 3 p. 20 p.
II.	French [*or* German] . . . . . 4 p. English . . . . . 2 p. German [*or* French] begun . . . 5 p. Geometry . . . . . 3 p. Physics . . . . . 3 p. Botany or Zoölogy . . . . . 3 p. 20 p.	Latin, or German, or French . . 5 or 4 p. English . . . . . 3 or 4 p. Geometry . . . . . 3 p. Physics . . . . . 3 p. History . . . . . 3 p. Botany or Zoölogy . . . . . 3 p. 20 p.
III.	French [*or* German] . . . . . 4 p. English . . . . . 3 p. German [*or* French] . . . . . 4 p. Mathematics { Algebra 2 / Geometry 2 } . . . 4 p. Astronomy ½ yr. & Meteorology ½ yr. 3 p. History . . . . . 2 p. 20 p.	Latin, or German, or French . . . 4 p. English { as in others 3 / additional 2 } . . . . . 5 p. Mathematics { Algebra 2 / Geometry 2 } . . . 4 p. Astronomy ½ yr. & Meteorology ½ yr. 3 p. History { as in the Latin-Scientific 2 / additional 2 } 4 p. 20 p.
IV.	French [*or* German] . . . . . 3 p. English { as in Classical 2 / additional 2 } . . . . 4 p. German [*or* French] . . . . . 4 p. Chemistry . . . . . 3 p. Trigonometry & Higher Algebra 3 / *or* / History } 3 p. Geology or Physiography ½ yr. / and / Anatomy, Physiology, & Hygiene ½ yr. } 3 p. 20 p.	Latin, or German, or French . . . 4 p. English { as in Classical 2 / additional 2 } . . . . 4 p. Chemistry . . . . . 3 p. Trigonometry & Higher Algebra . . 3 p. History . . . . . 3 p. Geology or Physiography ½ yr. / and / Anatomy, Physiology, & Hygiene ½ yr. } 3 p. 20 p.

years as truly representative as possible. Secondly, inasmuch as *many boys and girls who begin* the secondary school course

discover his tastes by making excursions into all the principal fields of knowledge. The youth who has never studied any but his native language cannot know his own capacity for linguistic acquisition; and the youth who has never made a chemical or physical experiment cannot know whether or not

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I.	Latin . . . . . 5 p. English . . . . . 4 p. Algebra . . . . . 4 p. History . . . . . 4 p. Physical Geography . . . . . 3 p. 20 p.	Latin . . . . . 5 p. English . . . . . 4 p. Algebra . . . . . 4 p. History . . . . . 4 p. Physical Geography . . . . . 3 p. 20 p.
II.	Latin . . . . . 5 p. English . . . . . 2 p. *German [*or* French] begun . . . 4 p. Geometry . . . . . 3 p. Physics . . . . . 3 p. History . . . . . 3 p. 20 p.	Latin . . . . . 5 p. English . . . . . 2 p. German [*or* French] begun . . . . 4 p. Geometry . . . . . 3 p. Physics . . . . . 3 p. Botany or Zoölogy . . . . . 3 p. 20 p.
III.	Latin . . . . . 4 p. *Greek . . . . . 5 p. English . . . . . 3 p. German [*or* French] . . . . . 4 p. Mathematics { Algebra 2 / Geometry 2 } . . . 4 p. 20 p.	Latin . . . . . 4 p. English . . . . . 3 p. German [*or* French] . . . . . 4 p. Mathematics { Algebra 2 / Geometry 2 } . . . 4 p. Astronomy ½ yr. & Meteorology ½ yr. 3 p. History . . . . . 2 p. 20 p.
IV.	Latin . . . . . 4 p. Greek . . . . . 5 p. English . . . . . 2 p. German [*or* French] . . . . . 3 p. Chemistry . . . . . 3 p. Trigonometry & Higher Algebra / *or* / History . . 3 p. 20 p.	Latin . . . . . 4 p. English { as in Classical 2 / additional 2 } . . . . 4 p. German [*or* French] . . . . . 3 p. Chemistry . . . . . 3 p. Trigonometry & Higher Algebra / *or* / History . . 3 p. Geology or Physiography ½ yr. / and / Anatomy, Physiology, & Hygiene ½ yr. . . 3 p. 20 p.

* In any school in which Greek can be better taught than a modern language, or in which local public opinion or the history of the school makes it desirable to teach Greek in an ample way, *Greek may* be substituted for German or French in the second year of the Classical *programme.*

he has a taste for exact science. The wisest teacher, or the most observant parent, can hardly predict with confidence a boy's gift for a subject which he has never touched. In these considerations the Committee found strong reasons for postponing bifurcation, and making the subjects of the first two

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I.	French [*or* German] begun . . . . 5 p. English . . . . . 4 p. Algebra . . . . . 4 p. History . . . . . 4 p. Physical Geography . . . . . 3 p. 20 p.	Latin, or German, or French . . . 5 p. English . . . . . 4 p. Algebra . . . . . 4 p. History . . . . . 4 p. Physical Geography . . . . . 3 p. 20 p.
II.	French [*or* German] . . . . . 4 p. English . . . . . 2 p. German [*or* French] begun . . . . 5 p. Geometry . . . . . 3 p. Physics . . . . . 3 p. Botany or Zoölogy . . . . . 3 p. 20 p.	Latin, or German, or French . . 5 or 4 p. English . . . . . 3 or 4 p. Geometry . . . . . 3 p. Physics . . . . . 3 p. History . . . . . 3 p. Botany or Zoölogy . . . . . 3 p. 20 p.
III.	French [*or* German] . . . . . 4 p. English . . . . . 3 p. German [*or* French] . . . . . 4 p. Mathematics { Algebra 2 / Geometry 2 } . . . . 4 p. Astronomy ½ yr. & Meteorology ½ yr. 3 p. History . . . . . 2 p. 20 p.	Latin, or German, or French . . . 4 p. English { as in others 3 / additional 2 } . . . . . 5 p. Mathematics { Algebra 2 / Geometry 2 } . . . 4 p. Astronomy ½ yr. & Meteorology ½ yr. 3 p. History { as in the Latin-Scientific 2 / additional 2 } 4 p. 20 p.
IV.	French [*or* German] . . . . . 3 p. English { as in Classical 2 / additional 2 } . . . . 4 p. German [*or* French] . . . . . 4 p. Chemistry . . . . . 3 p. Trigonometry & Higher Algebra 3 / *or* / History } 3 p. Geology or Physiography ½ yr. / and / Anatomy, Physiology, & Hygiene ½ yr. } 3 p. 20 p.	Latin, or German, or French . . . 4 p. English { as in Classical 2 / additional 2 } . . . . 4 p. Chemistry . . . . . 3 p. Trigonometry & Higher Algebra . . 3 p. History . . . . . 3 p. Geology or Physiography ½ yr. / and / Anatomy, Physiology, & Hygiene ½ yr. } 3 p. 20 p.

years as truly representative as possible. Secondly, inasmuch as *many boys and girls who begin* the secondary school course

do not stay in school more than two years, the Committee thought it important to select the studies of the first two years in such a way that linguistic, historical, mathematical, and scientific subjects should all be properly represented. Natural history being represented by physical geography, the Committee wished physics to represent the inorganic sciences of precision. The first two years of any one of the four programmes presented above will, in the judgment of the Committee, be highly profitable by themselves to children who can go no farther.

Although the Committee thought it expedient to include among the four programmes, one which included neither Latin nor Greek, and one which included only one foreign language (which might be either ancient or modern), they desired to affirm explicitly their unanimous opinion that, under existing conditions in the United States as to the training of teachers and the provision of necessary means of instruction, the two programmes called respectively Modern Languages and English must in practice be distinctly inferior to the other two.

In the construction of the sample programmes the Committee adopted twenty as the maximum number of weekly periods, but with two qualifications, namely, that at least five of the twenty periods should be given to unprepared work, and that laboratory subjects should have double periods whenever that prolongation should be possible.

The omission of music, drawing, and elocution from the programmes offered by the Committee was not intended to imply that these subjects ought to receive no systematic attention. It was merely thought best to leave it to local school authorities to determine, without suggestions from the Committee, how these subjects should be introduced into the programmes in addition to the subjects reported on by the Conferences.

The Committee were governed in the construction of the first three programmes by the rule laid down by the language Conferences, namely, that two foreign languages should not be begun at the same time. To obey this rule is to accept strict limitations in the construction of a four years' Classical programme. *A five years'* or six years' programme can be made

much more easily under this restriction. The Committee were anxious to give five weekly periods to every foreign language in the year when it was first attacked; but did not find it possible to do so in every case.

The four programmes can be carried out economically in a single school; because, with a few inevitable exceptions, the several subjects occur simultaneously in at least three programmes and with the same number of weekly periods.

Numerous possible transpositions of subjects will occur to every experienced teacher who examines these specimen programmes. Thus, in some localities it would be better to transpose French and German; the selection and order of science subjects might be varied considerably to suit the needs or circumstances of different schools; and the selection and order of historical subjects admit of large variety.

Many subjects now familiar in secondary school courses of study do not appear in Table III. or in the specimen programmes given above; but it must not be supposed that the omitted subjects are necessarily to be neglected. If the recommendations of the Conference were carried out, some of the omitted subjects would be better dealt with under any one of the above programmes than they are now under familiar high school and academy programmes in which they figure as separate subjects. Thus, drawing does not appear as a separate subject in the specimen programmes; but the careful reader of the Conference reports will notice that drawing, both mechanical and free-hand, is to be used in the study of history, botany, zoölogy, astronomy, meteorology, physics, geography, and physiography, and that the kind of drawing recommended by the Conferences is the most useful kind, — namely, that which is applied to recording, describing, and discussing observations. This abundant use of drawing might not prevent the need of some special instruction in drawing, but it ought to diminish the number of periods devoted exclusively to drawing. Again, neither ethics nor economics, neither metaphysics nor aesthetics appear in the programmes; but in the large number of periods devoted to English and history there would be some time for incidental instruction in the elements of these subjects. It is through the *reading and writing* required of pupils, or

recommended to them, that the fundamental ideas on these important topics are to be inculcated. Again, the industrial and commercial subjects do not appear in these programmes; but book-keeping and commercial arithmetic are provided for by the option for algebra designated in Table III.; and if it were desired to provide more amply for subjects thought to have practical importance in trade or the useful arts, it would be easy to provide options in such subjects for some of the science contained in the third and fourth years of the "English" programme.

The Committee of Ten think much would be gained if, in addition to the usual programme hours, a portion of Saturday morning should be regularly used for laboratory work in the scientific subjects. Laboratory work requires more consecutive time than the ordinary period of recitation affords; so that an hour and a half is about the shortest advantageous period for a laboratory exercise. The Committee venture to suggest further that, in addition to the regular school sessions in the morning, one afternoon in every week should be used for out-of-door instruction in geography, botany, zoölogy, and geology, these afternoon and Saturday morning exercises being counted as regular work for the teachers who conduct them. In all laboratory and field work, the Committee believe that it will be found profitable to employ as assistants to the regular teachers, — particularly at the beginning of laboratory and field work in each subject, — recent graduates of the secondary schools who have themselves followed the laboratory and field courses; for at the beginning the pupil will need a large amount of individual instruction in the manipulation of specimens, the use of instruments, and the prompt recording of observations. One teacher without assistants cannot supervise effectively the work of thirty or forty pupils, either in the laboratory or in the field. The laboratory work on Saturday mornings could be maintained throughout the school year; the afternoon excursions would of course be difficult, or impossible, for perhaps a third of the school year.

In general, the Committee of Ten have endeavored to emphasize the principles which should govern all secondary school *programmes, and* to show how the main recommendations of

the several Conferences may be carried out in a variety of feasible programmes.

One of the subjects which the Committee of Ten were directed to consider was requirements for admission to college; and particularly they were expected to report on uniform requirements for admission to colleges, as well as on a uniform secondary school programme. Almost all the Conferences have something to say about the best mode of testing the attainments of candidates at college admission examinations; and some of them, notably the Conferences on History and Geography, make very explicit declarations concerning the nature of college examinations. The improvements desired in the mode of testing the attainments of pupils who have pursued in the secondary schools the various subjects which enter into the course will be found clearly described under each subject in the several Conference reports; but there is a general principle concerning the relation of the secondary schools to colleges which the Committee of Ten, inspired and guided by the Conferences, feel it their duty to set forth with all possible distinctness.

The secondary schools of the United States, taken as a whole, do not exist for the purpose of preparing boys and girls for colleges. Only an insignificant percentage of the graduates of these schools go to colleges or scientific schools. Their main function is to prepare for the duties of life that small proportion of all the children in the country — a proportion small in number, but very important to the welfare of the nation — who show themselves able to profit by an education prolonged to the eighteenth year, and whose parents are able to support them while they remain so long at school. There are, to be sure, a few private or endowed secondary schools in the country, which make it their principal object to prepare students for the colleges and universities; but the number of these schools is relatively small. A secondary school programme intended for national use must therefore be made for those children whose education is not to be pursued beyond the secondary school. The preparation of a few pupils for college or scientific school should in the ordinary secondary school be the

incidental, and not the principal object. At the same time, it is obviously desirable that the colleges and scientific schools should be accessible to all boys or girls who have completed creditably the secondary school course. Their parents often do not decide for them, four years before the college age, that they shall go to college, and they themselves may not, perhaps, feel the desire to continue their education until near the end of their school course. In order that any successful graduate of a good secondary school should be free to present himself at the gates of the college or scientific school of his choice, it is necessary that the colleges and scientific schools of the country should accept for admission to appropriate courses of their instruction the attainments of any youth who has passed creditably through a good secondary school course, no matter to what group of subjects he may have mainly devoted himself in the secondary school. As secondary school courses are now too often arranged, this is not a reasonable request to prefer to the colleges and scientific schools; because the pupil may now go through a secondary school course of a very feeble and scrappy nature — studying a little of many subjects and not much of any one, getting, perhaps, a little information in a variety of fields, but nothing which can be called a thorough training. Now the recommendations of the nine Conferences, if well carried out, might fairly be held to make all the main subjects taught in the secondary schools of equal rank for the purposes of admission to college or scientific school. They would all be taught consecutively and thoroughly, and would all be carried on in the same spirit; they would all be used for training the powers of observation, memory, expression, and reasoning; and they would all be good to that end, although differing among themselves in quality and substance. In preparing the programmes of Table IV., the Committee had in mind that the requirements for admission to colleges might, for schools which adopted a programme derived from that table, be simplified to a considerable extent, though not reduced. A college might say, — We will accept for admission any groups of studies taken from the secondary school programme, provided that the sum of the studies in each of the four years amounts to sixteen, or eighteen, or twenty periods a week, — as may be thought best, — and

provided, further, that in each year at least four of the subjects presented shall have been pursued at least three periods a week, and that at least three of the subjects shall have been pursued three years or more. For the purposes of this reckoning, natural history, geography, meteorology, and astronomy might be grouped together as one subject. Every youth who entered college would have spent four years in studying a few subjects thoroughly; and, on the theory that all the subjects are to be considered equivalent in educational rank for the purposes of admission to college, it would make no difference which subjects he had chosen from the programme — he would have had four years of strong and effective mental training. The Conferences on Geography and Modern Languages make the most explicit statement to the effect that college requirements for admission should coincide with high-school requirements for graduation. The Conference on English is of opinion "that no student should be admitted to college who shows in his English examination and his other examinations that he is very deficient in ability to write good English." This recommendation suggests that an ample English course in the secondary school should be required of all persons who intend to enter college. It would of course be possible for any college to require for admission any one subject, or any group of subjects, in the table, and the requirements of different colleges, while all kept within the table, might differ in many respects; but the Committee are of opinion that the satisfactory completion of any one of the four years' courses of study embodied in the foregoing programmes should admit to corresponding courses in colleges and scientific schools. They believe that this close articulation between the secondary schools and the higher institutions would be advantageous alike for the schools, the colleges, and the country.

Every reader of this report and of the reports of the nine Conferences will be satisfied that to carry out the improvements proposed more highly trained teachers will be needed than are now ordinarily to be found for the service of the elementary and secondary schools. The Committee of Ten desire to point out some of the means of procuring these better

trained teachers. For the further instruction of teachers in actual service, three agencies already in existence may be much better utilized than they now are. The Summer Schools which many universities now maintain might be resorted to by much larger numbers of teachers, particularly if some aid, such as the payment of tuition fees and travelling expenses, should be given to teachers who are willing to devote half of their vacations to study, by the cities and towns which these teachers serve. Secondly, in all the towns and cities in which colleges and universities are planted, these colleges or universities may usefully give stated courses of instruction in the main subjects used in the elementary and secondary schools to teachers employed in those towns and cities. This is a reasonable service which the colleges and universities may render to their own communities. Thirdly, a superintendent who has himself become familar with the best mode of teaching any one of the subjects which enter into the school course can always be a very useful instructor for the whole body of teachers under his charge. A real master of any one subject will always have many suggestions to make to teachers of other subjects. The same is true of the principal of a high school, or other leading teacher in a town or city. In every considerable city school system the best teacher in each department of instruction should be enabled to give part of his time to helping the other teachers by inspecting and criticising their work, and showing them, both by precept and example, how to do it better.

In regard to preparing young men and women for the business of teaching, the country has a right to expect much more than it has yet obtained from the colleges and normal schools. The common expectation of attainment for pupils of the normal schools has been altogether too low the country over. The normal schools, as a class, themselves need better apparatus, libraries, programmes, and teachers. As to the colleges, it is quite as much an enlargement of sympathies as an improvement of apparatus or of teaching that they need. They ought to take more interest than they have heretofore done, not only in the secondary, but in the elementary schools: and they ought to take pains to fit men well for the duties

of a school superintendent. They already train a considerable number of the best principals of high schools and academies; but this is not sufficient. They should take an active interest, through their presidents, professors, and other teachers, in improving the schools in their respective localities, and in contributing to the thorough discussion of all questions affecting the welfare of both the elementary and the secondary schools.

Finally, the Committee venture to suggest, in the interest of secondary schools, that uniform dates — such as the last Thursday, Friday, and Saturday, or the third Monday, Tuesday, and Wednesday of June and September — be established for the admission examinations of colleges and scientific schools throughout the United States. It is a serious inconvenience for secondary schools which habitually prepare candidates for several different colleges or scientific schools that the admission examinations of different institutions are apt to occur on different dates, sometimes rather widely separated.

The Committee also wish to call attention to the service which Schools of Law, Medicine, Engineering, and Technology, whether connected with universities or not, can render to secondary education by arranging their requirements for admission, as regards selection and range of subjects, in conformity with the courses of study recommended by the Committee. By bringing their entrance requirements into close relation with any or all of the programmes recommended for secondary schools, these professional schools can give valuable support to high schools, academies, and preparatory schools.

CHARLES W. ELIOT,
WILLIAM T. HARRIS,
JAMES B. ANGELL,
JOHN TETLOW,
JAMES M. TAYLOR,
OSCAR D. ROBINSON,
JAMES H. BAKER,
RICHARD H. JESSE,
JAMES C. MACKENZIE,
HENRY C. KING.

4 December, 1893.

President Baker signs the above report, but adds the following statement: —

To the National Council of Education:

I beg leave to note some exceptions taken to parts of the Report of the Committee of Ten. Had the Committee not been limited in time, doubtless fuller discussion would have resulted in modifying some statements embodied in the report. The great value of the reports of the Conferences upon the subjects referred to them, as to matter, place, time, methods, adequate and continuous work for each subject, and identity of work in different courses, and the masterly summary and tabulation of their recommendations, made by the Chairman of the Committee of Ten, can but invite cordial commendation. Objections are raised to parts of the special work of the Committee.

1. I cannot endorse expressions that appear to sanction the idea that the choice of subjects in secondary schools may be a matter of comparative indifference. I note especially the following sentences, referring the reader to their context for accurate interpretation.

"Any school principal may say: — 'With the staff at my command I can teach only five subjects out of those proposed by the Conferences in the manner proposed. My school shall, therefore, be limited to these five.' Another school may be able to teach in the thorough manner proposed five subjects, but some or all of these five may be different from those selected by the first school."

"If twice as much time is given in a school to Latin as is given to mathematics, the attainments of the pupils in Latin ought to be twice as great as they are in mathematics, provided that equally good work is done in the two subjects; and Latin will have twice the educational value of mathematics."

"The schedule of studies contained in Table III. permits flexibility and variety in three respects. First, it is not necessary that any school should teach all the subjects which it *contains, or any particular* set of subjects."

"Every youth who entered college would have spent four years in studying a few subjects thoroughly; and on the theory that all the subjects are to be considered equivalent in educational rank for the purpose of admission to college, it would make no difference which subjects he had chosen from the programme — he would have had four years of strong and effective mental training."

All such statements are based upon the theory that, for the purposes of general education, one study is as good as another, — a theory which appears to me to ignore Philosophy, Psychology and Science of Education. It is a theory which makes education formal and does not consider the nature and value of the content. Power comes through knowledge; we can not conceive of observation and memory in the abstract. The world which offers to the human mind several distinct views is the world in which our power that comes through knowledge is to be used, the world which we are to understand and enjoy. The relation between the subjective power and the objective — or subjective — knowledge is inseparable and vital. On any other theory, for general education, we might well consider the study of Egyptian hieroglyphics as valuable as that of physics, and Choctaw as important as Latin. Secondary school programmes can not well omit mathematics, or science, or history, or literature, or the culture of the ancient classics. An education which gives a view in all directions is the work of elementary and secondary schools. Such an education is the necessary preparation for the special work of the university student. If I rightly understood, the majority of the Committee rejected the theory of equivalence of studies for general education.

Studies vary in value for the training of the different powers, and for this additional reason the choice can not be regarded as a matter of indifference.

The training of "observation, memory, expression and reasoning" (inductive) is a very important part of education, but is not all of education. The imagination, deductive reasoning, the rich possibilities of emotional life, the education of the will through ethical ideas and correct habit, all are to be con-

sidered in a scheme of learning. Ideals are to be added to the scientific method.

The dilemma which appears on an examination of the time demands of the various conferences offers to the programme maker the alternatives of omitting essential subjects and of a rational adjustment of the time element, while retaining all essential subjects. Reason and experience point toward the latter alternative. By wise selection of matter within the lines of study adequate and consecutive time can be given to each.

2. The language of the second paragraph following Table II. might be misconstrued to mean that the Committee favor the multiplication of courses with a loss of the thoroughness attainable when the teaching force is devoted to one or two courses. Intension rather than extension of effort, both in respect to the number of courses and in respect to the number of studies or topics under each principal subject, is to be strongly recommended.

3. It may seem trivial to offer criticism of the specimen programmes made by the Committee, and yet I believe that each member felt that with ample deliberation results somewhat different would have been reached. Note for instance that in some of the programmes history is entirely omitted in the second year, and physics is given only three hours per week, — no more time than is allowed for botany or zoölogy. There are many symmetrical secondary school programmes in actual operation today which furnish continuous instruction in all important subjects throughout the four years, allowing to each an amount of time adequate to good results. For most high schools the first, the Classical programme, and the last programme, the one offering one foreign language, will commend themselves because they are economical, and they combine a good finishing course with adequate college preparation.

4. On the basis of the tabulated results of the Conferences I believe that by earnest scientific examination a scheme of work can be formulated that will meet the views of the members of the Committee and of most educators. As an afterthought it may be an occasion for regret that the strength of the discussion was not devoted to Table III. Instead of con-

sidering the work of the Committee as ended, I would recommend that the National Council hold itself responsible for further examination of the data furnished by the Conferences. I have not presumed to offer a substitute report, because I believe that the importance of the work demands further effort of an entire Committee.

Respectfully submitted,

JAMES H. BAKER.

REPORTS OF THE CONFERENCES.

LATIN.

President Charles W. Eliot, Chairman of the Committee of Ten of the National Council of Education: —

The Conference upon the subject of Latin respectfully submits the following report: —

In seven sessions of nearly three hours each the Conference discussed all the questions suggested in the circular of instructions, except the last, respecting the proper limit between the preliminary and the final examination for admission to college; and on most of the points presented, as well as on several not suggested in the circular, arrived at unanimous or nearly unanimous conclusions, which will be found expressed in the Recommendations appended to this Report.

The first question considered was whether the requirements in Latin for admission to college ought to be increased.

It would be a very desirable gain to the study of Latin in our universities and colleges if the present standard of admission requirements could be raised; and the experience of other countries would seem to indicate that a higher standard is feasible. But, in view of the just demands for more and better work in several other subjects of the preparatory course, it seemed clear to the Conference that no increase in the *quantity* of the preparation in Latin should be asked for. It is fully believed, however, that, through the careful choice of teachers, and the employment of better methods, a gain in the *quality* of the preparation can be secured without the expenditure of more time than is now generally given in the better schools. See Recommendations 1, 6, 11, and 14, at the end of this Report.

Upon the subject first suggested in the memorandum of the Committee of Ten, — namely, the question of the age at which the study of Latin should be begun, — a comparison of the customs existing in Europe and in this country will be suggestive. In the United States, the average age is about fifteen years, and probably above that number rather than below it.[1] In England and on the Continent the

[1] At some private and endowed public schools in this country, however, the age is not far from twelve. In Michigan, successful experiments have been made in introducing the study of Latin into the grammar-school; and the trial is also being made in certain grammar-schools in Massachusetts.

study is seldom begun so late as at the age of twelve, and much oftener between the ages of nine and eleven; in other words, from four to six years earlier than with us. The reasons in favor of an early age are not far to seek. (1) Latin is a difficult language, and long study is needed to make it yield its best fruits. (2) The rudiments of the subject, and in particular the forms, can be more easily and quickly mastered at an early age; and, conversely, the study of these things constitutes a less agreeable and less suitable discipline for a mind that is becoming conscious of its powers. A radical change cannot be brought about in this country at once; but it is hoped that such a modification of grammar-school courses can be made without delay as to render it possible that the high-school course, — and with it the subject of Latin, — may be begun not later than at the age of fourteen. See Recommendations 2 and 3.

With regard to the number of years and the number of hours a week devoted to the study of Latin, the actual practice of the schools in this country varies greatly. In twenty-six representative schools having a four-year course, the aggregate of hours ranges from 580 to 1,009; and, in fourteen schools having a course of five or six years, from 740 to 1,925.[1] In the opinion of the Conference, Latin should claim about one-fifth of each school day, or five hours a week. This means a total of about 800 periods of forty-five or fifty minutes of actual work. If the course were to be one of five or six years, instead of four, the Conference would not recommend any diminution of the weekly allotment. The aggregate of 1,000 to 1,200 "hours" thus obtained, which might to some observers seem excessive, is much below the maximum amount already given in the fourteen representative schools having a course of five or six years, while it is identical with, or but little above, the average in those schools (viz., 1000 hours), and much below the average in the schools of England, France and Germany. The explanation of the undeniable fact that, in the countries just named, Latin has been more successfully employed than with us "as an instrument for training the mind to habits of intellectual conscientiousness, patience, discrimination, accuracy, and thoroughness, — in a word, to habits of clear and sound thinking," doubtless lies partly in the more liberal allowance of time. See Recommendations 3, 4, and 5.

The answer to the tenth question put before the Conference, with regard to the best method of testing attainments at the college examinations for admission, must turn mainly upon the general

[1] From statistics of forty representative schools gathered by the Committee of Ten.

character of the requirements held up before the schools. Up to the present time, the commoner form of requirement may be said to insist strongly upon the *quantitative* side. A certain number of books of certain authors are to be read, or certain defined substitutes, supposed to be equal in quantity; a certain number of lessons in some manual of Latin composition must be studied; and a certain amount of Latin grammar must be learned. After a preparation controlled by this quantitative conception, the test applied by colleges that do not use the certificate system must necessarily be directed to ascertaining what familiarity has been gained with the ground gone over. On the other hand, if the requirement be ability to translate "at sight" from Latin into English and from English into Latin, the test must necssarily be one of power. Its object is to show what the student is now capable of doing; and it may therefore fairly be called a *qualitative* test. It has distinct and great advantages. What the student knows and what he can do is made manifest at once to the practised eye, and, on the other hand, ignorance and feebleness emerge with fatal clearness. "Cramming" is made nearly useless by it, and the steady gain of power becomes the student's necessary aim and sole means of salvation. Still, many shrink from adopting it as the sole test. The examination, they urge, may, especially in view of the fact that there are many students of mediocre natural gifts, but of faithfulness and staying powers, properly take account of the amount of work which the candidate has covered, and of the thoroughness with which he has performed a fixed task, as a means of judging, in the rough, of his fitness for higher study. Yet the importance of devoting a good deal of attention to translation at sight is now universally acknowledged among the best teachers in school and college, and the recommendation (included in No. 6) that translation at sight form a constant and increasing part of the examination for admission and of the work of preparation, is therefore regarded by the Conference as of especial moment.

Intimately connected with the same subject is the question of the writing of Latin, — its place in the study of the language, the subject-matter to be employed, and the method of development to be adopted.

The object is not the acquirement of the power for its own sake; for this power, while once indispensable, is not to-day a necessity, nor even, for most men, an especially desirable accomplishment. The practice should be employed as a *means*, — as a powerful instrument for gaining a penetrating insight into the structure, idiom, and spirit of the Latin language, both in its agreement with, and in its differences from, the mother tongue. It is admitted, for example, that, in order to be able to read Latin, one must have a firm grasp of the

principles of Latin syntax. But the experience of many teachers has shown that this grasp is to be gained with much more certainty through writing Latin than in any other way; and in this field, too, the student himself clearly sees the reasonableness and immediate utility of the same instruction which, when applied to a Latin text, often seems to him, and often is, needless and barren. Here, then, should fall the principal part of the syntactical instruction. And, for similar reasons, the writing of Latin affords the best field for the mastery of forms, of vocabulary, of idiom, and of order.

The majority of the Conference is of the belief that, instead of being dissociated from practice in reading and translating, as it still so commonly is, practice in writing should be regarded as the obverse and counterpart of reading, and therefore should be carried on *pari passu* with it. In no other way can direct advantage be taken of the threads of association woven in the mind by the reading of an author, and in no other way can the subject-matter, in the earlier stages, be made so interesting and so practical. It follows that the basis of all sentences and passages set for translation into English in the preparatory schools should be found in the Latin texts read. And it is also evidently desirable that the portions of the text chosen should be limited, — so limited, in fact, that they can gradually be committed to memory, and preserved as a permanent store. "This small treatise alone" says George Long, in the preface to his edition of the *Cato Major*, "if thoroughly mastered, . . . would make a man a good Latin scholar."

The use of manuals of composition based upon a plan of exercises having no connection with the texts read, and arranged in artificial sequence to illustrate syntactical rules, ought accordingly to be discouraged. See Recommendation 11.

The summoning of the Conference afforded a fortunate opportunity for the discussion of an important question not included in the memorandum, namely, what authors, and what parts of authors, should constitute the reading of the preparatory schools? Thus far, the colleges have in general left the schools very little liberty of choice. Three authors have been named by every college that prescribes set work. Of these three the easiest, or, as one should perhaps say, the least difficult, is Cæsar. Hence it has come about that the *Gallic War* is very commonly used as the first reading-book in Latin. Our American schools are probably the only ones in the world of which this is true. The choice is an unfortunate one. The book is altogether too difficult for beginners; it is too exclusively military in contents to be generally interesting; its vocabulary is too largely restricted, from the nature of the subject, to marches, sieges, and

battles, to afford the best introduction to subsequent reading; and, finally, it touches human life at too few points to be morally helpful and significant. The Conference therefore makes two recommendations: first, that some easy reading, such as Gradatim, Eutropius, or the Viri Romae, be used as a transition from the introductory work of the beginner's book to the regular reading of a classic; and second, that at least a portion of the time now usually given to Cæsar be taken from him and given to Nepos. Against the "*Lives*" not one of the reasons urged against the use, or exclusive use, of the *Gallic War* can be brought. The objection that the Latinity of Nepos is inferior to that of Cæsar would be of weight only in case the chief object in the earlier years of the study of Latin were the immediate production of writers of an elegant Latin style. No such fear is felt by German, French, and English school-masters, who have found, as have also various experimenters in this country, that the use of the books mentioned above as bridges to and substitutes for Cæsar contributes to the pleasure and progress of the student. See Recommendation 9.

The Bucolics of Virgil constitute the least original, and, to the school-boy, least interesting, and most difficult, part of the poet's works. Their proper place is in an elective course for university students, in connection with the reading of Theocritus. It is advised that they be discontinued in the requirements for admission to college. See Recommendation 7.

Some teachers of learning, experience, and skill have believed that, in what is called the inductive method, they have found a shorter and better way of learning Latin than has heretofore been devised. The saving of time and the attainment of a more exact scholarship, which are the ends they have set themselves to bring about, are certainly greatly to be desired. Perhaps some good has been done by the publication of books calling attention strongly to a side of linguistic study which, even in the earlier years, should not be entirely ignored. But the Conference is of the opinion that it is an error to erect into the sole controlling principle what should, in the nature of things, be subordinate. On this subject, therefore, a word of caution seemed to nearly all its members to be desirable. See Recommendation 13.

In the judgment of the Conference, the greatest defects now existing in the instruction given in Latin in the schools are to be found in the elementary stages. It is a common practice to put the teaching of beginners into the hands of the youngest and most poorly paid teachers, that is to say, of those who have the slenderest equipment of knowledge and experience. The same thing is true in other subjects; but the danger seems to be especially great in Latin, partly because the field is so vast, covering as it does a great number and

variety of topics, and partly because it is so difficult to determine practically the best distribution and appropriation of time along the several lines of study. To competent knowledge the teacher must add the clearest and most definite conceptions of the relative importance and the logical sequence of topics, of the ends to be reached in each stage, and of the best methods of arriving at these ends. If, then, the results of the study of Latin often seem absurdly meagre in proportion to the time spent upon the subject, we must look for the cause very largely in the fact that, at the most critical point in his study, the student is given over to an instructor of the least experience and knowledge.

To describe in full the best method of teaching Latin throughout the course, as was suggested in the memorandum of your Committee, would require the conversion of this Report into a treatise. But a brief summary may be made of the things to do and the things to avoid, and a few definite suggestions may be offered under each of the former heads.

The teacher of elementary Latin need not concern himself too much with the remoter ends of the study. To him the question should be: What knowledge is of prime importance, as the foundation for subsequent work? Stated generally, it may be said that the work of the first period should be (1) learning to pronounce accurately and to read fluently and intelligently the Latin text of what has been studied; (2) the mastery of inflection, so that number, case, person, mode, tense, etc., can be instantly recognized, and, conversely, can be formed without much hesitation by the student himself; (3) the acquisition of a working vocabulary of from one to two thousand words; (4) the mastery of the order of the Latin sentence; (5) the mastery of the simpler principles of syntax, regarded as a means of expression; (6) learning how to understand simple narrative in Latin; and (7) learning how to translate such narrative into true English. In necessary connection with the pursuit of these aims, a good deal of training of the ear should be employed, through listening to the reading or speaking of the teacher; and, in addition, a certain amount of practice in turning English into Latin will be necessary, as an indispensable instrument for fixing forms in the memory and establishing a feeling for their syntactical powers. On the other hand, the things to be avoided are (1) a dispersion of effort in consequence of the attempt to include too many parts of the study in the first stage; (2) an undue prominence of rules, and the treatment of syntax as an end in itself, rather than as an auxiliary to the penetration of the sense; and (3) the use of "translation English."

The more detailed suggestions that follow, under the head of the things to be done, apply in part, as will be seen, to the work of the later years of the preparatory course, as well as to the earlier.

1. Pronunciation and Reading Aloud. The Conference desires to emphasize the importance of a correct pronunciation of Latin from the very beginning of the study. A student who acquires the habit of pronouncing accurately in reading Latin prose will find little difficulty, and a genuine pleasure, in reading Latin verse. As practical aids to this end, the following suggestions are made with regard to certain peculiarities of the pronunciation of the Romans: —

(*a*) The long vowels received full length, not only in ultimas and penults, but in every syllable. (So, for example, the second *a* in amābāmus should occupy about as much time in the utterance as the second in amābam).

(*b*) An obstructed consonant (*i. e.*, a consonant made more difficult to articulate fully, through being immediately followed by another, either in the same word or at the beginning of the next) was pronounced with a clearness and distinctness not known in similar cases in English, so that it occupied about as much time in the utterance as a short vowel. [A mute followed by a liquid, on the other hand, made a combination easy to pronounce both fully and rapidly, and so occupied no appreciable time in ordinary speech. In poetry, however, the first consonant was occasionally treated as obstructed, being pronounced as a distinct sound, out of combination].

(*c*) In verse, as in daily speech, a final vowel, before an initial vowel or vowel with *h*, was run as a glide into the next vowel.

Without a knowledge of quantities (and, of course, not merely in penults and ultimas, but in all syllables), correct reading is, in the nature of things, impossible. Yet to acquire this knowledge by looking up every word in the dictionary is, to the young student, a laborious, and, relatively, an unprofitable task. He should learn his quantities by the easiest and most direct way, namely, by the guidance of eye and ear. Hence books prepared for the first two years of a four-year course should, in the text proper, as well as in the paradigms, notes, and vocabulary, have the vowels long by nature marked (the unmarked ones being understood to be short). And the teacher, from whom, by unconscious imitation, class after class will largely take it pronunciation, should not feel at liberty to be careless in his own practice. He will find rules to be of little value, and example to be all-important.

For the sounds of the letters, the following scheme is recommended: —

ā as in *father*.

a like first *a* in *aha* (same quality as second but short), first vowel in *artistic* (of course with no *r* sound).

ē like the English *ā*-sound as heard in *skein*, *cave*, *Cain*, but without the vanishing *ee*-element which ends the English sound.

e as in *net*, *bed*.

i as in *machine*.

ĭ as in *pin*.

ō like the English *ō*-sound heard in *note*, but without the vanishing *oo*-element which ends the English sound.

o as in the first syllable of *obey* and the second of *melody*. The sound is not the same as in *not*, *dot*.

ū as in *rule*.

u as in *pull*.

y like French *u*, German *ü*.

ae like *ai* in *aisle*.

oe like *oi* in *oil*.

au like *ow* in *how*.

eu by pronouncing both elements in rapid succession, — a combination not occurring in English.

ei as in *skein* (*with* the vanishing *ee*-element).

i consonantal (sometimes printed *j*) like *y* in *yet*.

ui occurs chiefly in *huic* and *cui*, which should be pronounced *wheek*, *kwee*.

b, **d**, **f**, **h**, **k**, **l**, **m** (not final), **n**, **p**, **q**, as in English, except that **bs** and **bt** should be pronounced *ps* and *pt*.

c always like *k*.

g always as in *get*; **gu** like *gw*, when preceded by *n* and followed by a vowel; **ng** like English *ng* in *anger*.

qu like English *qu* in *quick*, *queen*.

r trilled with the tip of the tongue.

s always as in *sin*; **su** like *sw* in *suavis*, *suadeo*, *suesco*, and in compounds and derivatives of these words.

z like *z*. (The evidence is as yet conflicting with regard to the sound of this consonant — probably *zd*, or *dz*, though possibly *z* — and for these reasons the English sound of *z* is for the present recommended).

t always as in *ten* (never with the sound of *sh*, as in English *creation*).

v like *w*.

x like *ks*.

ph, **th**, and **ch** not as in English, but nearly like *p*, *t*, and *k* (strictly with a slight explosive sound, as heard at the end of English words, *e. g.*, *hop*. *hot*, *hock*).

Final **m** preceding an initial vowel (or vowel with *h*) should be pronounced as a faint nasal sound, the lips approaching the ordinary *m*-position, but not touching. The pronunciation before a consonant is doubtful, and, for the present, a change from the sound of English *m* is not recommended.

It is strongly recommended that abundant practice be given in the reading aloud of a continuous text already studied, which should be assigned in advance for the purpose, and carefully prepared. Not only is this an excellent literary exercise, which will add much to the interest and sense of reality of the subject-matter, but it will also contribute greatly to a feeling for forms (since in Latin so much depends upon word endings), and to a feeling for Latin order.

In this reading, while care should of course be taken with the individual sounds, it must not be supposed that pronunciation is the only or even the chief thing to aim at. The meaning of the text must not be subordinated to the sounds of the letters. The reader should endeavor to bring out the thought and literary art of his author, not only by a clear and full and easily-moving utterance, but by the grouping of words that constitute a phrase, by the suggestion of balance or antithesis wherever they are found, by a hint to the ear where the thought of the writer points back to something that has been said, or forward to something that is about to be said, and by emphasis in the expression wherever there is emphasis in the thought.

In this exercise the teacher himself (of course after careful preparation) should from time to time take part. And, whether it be the teacher or one of their own number who is reading, the pupils should be encouraged to try always to follow the sense by the ear alone, without the help of the book.

2. Forms. The mastery of forms is indispensable as a basis of any sound knowledge and of any progress, and, if not acquired in the first year, is very rarely acquired later. The method must, in the main, be two-fold translation; first of single words, then of common combinations of adjective and noun, or pronoun and noun, or of all three; then of short phrases, as, *e. g.*, a verb and its object, an adjective, preposition, and noun, forming a phrase, etc. Particularly should dependence not be made wholly or chiefly on the repetition of tabulated forms.

3. Vocabulary. The mastery of the vocabulary of the language is a prodigious task. It confronts the learner at the outset, and it remains the last obstacle to be overcome. The fact seems not to be appreciated in elementary instruction, and accordingly many teachers think that text-books for the use of beginners should not contain more than a few hundred words, an error almost as great as to suppose that the words chosen should be largely taken from Caesar's *Gallic War*. It has already been said that this book is of too technical a character to constitute a good introduction to the reading of Latin; and to plan the elementary work with especial reference to

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Some suggestions for the easing of the young learner's task may be gathered from books that have appeared within a few years. (*a*) Special vocabularies attached to separate exercises or selections should in no case be committed to memory before the study of such *pensa*, but should be used for reference first, and memorized last of all; that is, words should be studied in a sentence before they are studied in isolation. Not only is the immediate tax upon the memory in this way lightened, but the impression made is more lasting. (*b*) Related words should be grouped together as fast as they occur. Five words obviously related in form and meaning can more easily be learned and remembered than one word in isolation. (*c*) The comparison and discrimination of nearly synonymous words (to be made, however, only as they occur in the learner's actual experience in reading) aids by giving definiteness and individuality to each. (*d*) And, finally, the greatest auxiliary is the habit of constant observation of the different applications of the same word. Students seldom know more than one English rendering for a Latin word, or more than one Latin rendering for an English word, — a state of things due in part to the want of the habit just referred to, but in part also to an undue insistence, at the earliest stage of study, on the memorizing of the one particular meaning that happens to be given in the text-book. This memorizing of one meaning is, in fact, what many teachers mean by "mastering" a vocabulary.

4. Syntax. The study of syntax may well, in university work, be dealt with as a matter of special interest to the advanced student, and be offered in courses by itself. But for the student who is preparing for college it is merely an indispensable means to an end, namely, the power to read. This statement by no means implies that it is to be treated carelessly and superficially by the teacher (for, if that be done, no real power to read can possibly be gained), but only that it will be taught by him in the most helpful manner, if he will do the greater part of his syntactical questioning in connection with exercises in which the student is trying to get at the meaning of a new sentence (*i. e.*, in translation at sight or at hearing) and in connection with the writing of Latin (see 5 and 6 below). No attempt should be made, however, to master the entire apparatus at the outset. A further suggestion of considerable importance may be offered. Where, as is constantly happening, a mistake in translation is due to a mistake in

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syntax, the teacher should not be content with giving a correct translation himself, or with asking some pupil to do it, but should always himself state, or ask some one in the class to state, what the Latin would be for the English actually given. If this is done, syntax is seen in its true light, as one of the means by which the writer expresses his thought: if it is not done, the syntax of a given passage seems a matter of indifference.

5. ORDER. The importance of a genuine familiarity with Latin order can hardly be over-estimated. No one can really *read* Latin unless, whether consciously or instinctively, he is so familiar with the way in which the Roman arranged his sentences that it seems as natural to him as the English order. It will be a help if the teacher will frequently point out whatever in this respect is noteworthy, and particularly if he will always, in working with his classes at the exercise of translation at sight, hold to the Latin order until he thinks that the thought has been grasped, — not pass from one part of the sentence to another, to make out an English order. Much help will also be found in the exercise described under 6 below (at the end of the section), and in the exercise of listening, without looking at the book, to the reading of a prepared text by the teacher or fellow-pupil. And students should also be encouraged to read over and over by themselves, without translating, Latin with which they have become familiar in the class-room.

It is obvious that a proper Latin order should be insisted upon from the outset in all Latin written by the student. "English-Latin" should be as carefully avoided as the hybrid "Latin-English" too often accepted as translation. Equally important is it that the editors of elementary text-books should put before the student no Latin arranged in any other than a Latin order.

6. LEARNING TO UNDERSTAND THE LATIN. The success of the student in one of the points most essential to the attainment of power to read, namely, in learning to understand his author in his author's tongue, will depend in a large degree upon the attitude of mind of his teacher. The latter should, from the very beginning, hold up the idea that the highest aim of Latin scholarship, on the literary side, is to be able to read Latin, as every competent scholar learns to read French and German, with a direct comprehension and enjoyment of the very words written by the author, not of an English substitute made by the reader. The student should be taught to regard translation, not as a means of finding out what his author has said, but as, on the one hand, a way of making it clear to his instructor that he has understood, and, on the other, an exercise in expression, — *a literary exercise*, — in his own tongue. And finally, it should be

shown him that, even on the most practical grounds, to attempt to find out the meaning of a Latin sentence through translating it (as the common way is) is an operation almost sure to miscarry; that the Latin, as in the case of a *qui*-clause, an *ut*-clause, a *cum*-clause, etc., often uses a single word as connective, where the English would employ one or another out of a large group (*e. g.*, for the *ut*-clause, "when," "just as," "although," "in order to," "so that"), and that to translate by anything whatsoever, before the complete evidence of the entire sentence has been had and the relation of part to part seen, is to run a very large risk of going astray at this point, and of being led still further afield in other points in the unconscious attempt to make them consistent with the first mistake. But the student, dealing with a language in which the form of the sentence is entirely new to him, is naturally prone to go astray in precisely this way. He should therefore constantly receive practical help. Practice in translating at sight, or more exactly, in *understanding* at sight, under the instructor's eye *and then* translating, ought to be given daily, or at least very frequently. In general, the best passage for the purpose will be the passage immediately following the lesson of the day, for the double reason that the student is familiar with the context, and that, when the additional exercise carries him straight on to his end, he feels the reality of his progress. The Latin should always be read aloud, sometimes by a student, sometimes by the master, before any translation is ventured upon. The master should stop the student here and there, if his way of reading shows that his grouping is wrong, or if any other indication proves that he has not understood; and other pupils should be asked to correct him. Where a word is employed to give notice in advance that something is coming, this should be made clear by the way of reading. Where a Latin word calls for some construction yet to come, to complete its meaning, and either of several constructions may be employed according to the exact shade of the author's thought (as, *e. g.*, *dico* may be followed by the interrogative subjunctive clause, or by the infinitive, or by an *ut*- or *ne*-clause, according as the idea is of asking a question, or stating a fact, or giving a direction), this range of possibilities should be pointed out (unless it has already been pointed out so frequently that the class has become familiar with it); after which nothing further need be said when the completing construction, thus already foreseen as a possibility or certainty, is actually reached. Where there is danger of going astray through misapprehension of the syntax of a word, the construction (*i. e.*, the force of the case, the mode, or the tense) should be asked for. No question upon construction should be put *except as a means of guiding the class* to an understanding of the

meaning of the Latin; and consequently every question of this sort should precede the translation.

When a sentence is manifestly easy, and has probably been understood by the class, it is well to pass straight on without translating it. The greater part of what is read will, however, require translation.

The habit of trying to understand a sentence in the original, *before translating*, will be more easily acquired, if the teacher will from time to time put a new passage upon the board, a word or phrase at a time, or, better yet, read it aloud, calling attention as he goes along, by comment or question, to indications of meaning which would have guided a Roman, but asking for no translation until the whole passage has been written or read.

In the preparation of his daily lesson by himself, the student should be urged to study the Latin, in entire faithfulness to the aims stated above, in the order in which it is written, without any skipping about. The sentence should be read through once, twice, or, if necessary, three times *in the Latin*, with no reference to the making of a translation, but with the mind fixed upon grasping the meaning directly. If the effort has in part failed, the student may then help himself by making a rough rendering of the sentence, word for word, *still in the Latin order*, and with great suspense of mind in the case of words that are capable of corresponding to a variety of phrases in English. This rough rendering, however, must be regarded as a mere temporary expedient, at the last resort, for getting at the meaning, not, of course, as translation into English. The preparation for the translation to be given in the class-room is an entirely different exercise, and should be the last act of the preparation of the lesson.

7. Learning to Translate into English. There is probably no better exercise in English expression than the rendering of the thought of a Greek or Roman author into English idiom. The very difference of the two idioms increases the value of the exercise. But great loss is sustained by the student when, as is much too frequently the case, he is allowed to translate into a diction and idiom which have no existence in actual English speech or English literature. Such phrases, *e. g*, as "this one, that one" (*hic, ille*), which are never heard outside the class-room, ought not be tolerated in it. For the sake of the clearer exhibition of the grammatical manner of expression in the Latin, it is well that the translation should correspond to the original where the two idoms are identical, but no farther. Especial care should be taken to render the order of development of the thought in the Latin, as shown by the order of the original, and the student should unhesitatingly, where English idiom demands it, change the

active voice to the passive, and break a Latin sentence into as many English sentences as may be desirable.

A higher ideal of translation than it is easy to attain by oral work alone may be set up in the minds of students, if a passage is occasionally assigned for carefully studied written translation, and if a number of the compositions thus produced are then read aloud, criticisms of style being asked for from the class, and special excellencies pointed out by the teacher. It is also a great help, if the teacher makes a practice of giving the best version of which he is capable, after the lesson has been translated by the class, not allowing himself to interpose remarks, but translating fluently from the beginning to the end.

In what has been said thus far, stress has been laid upon the mastery of the mechanism of expression in Latin, — the words, their forms and syntactical constructions, and the order in which they stand in the sentence. But, at the very outset, the student should be made to understand that these things are not ends but tools, and that the end is to gain, through the reading of Latin, an insight into the thought and feeling of a people who have contributed very largely to make the life of the civilized world of to-day what it is. The Commentaries of Cæsar, the Epic of Virgil, and the Orations of Cicero, — commonly spoken of as subjects required for admission to college, — are in reality masterpieces of literary style, and historical documents of first-rate importance. The teacher, from whose attitude of mind his pupils are likely to take their own attitude, will do well not to allow the burden of daily work and yearly repetition to lead him to set up a mechanical conception of Latin as a field for intellectual gymnastics, in place of the true conception of a vital literature, capable of exerting a strong attraction upon the young student (for the most part possessed as yet of but a very slight vision of any world except that which is immediately about him), and of becoming a powerful influence for the training of his taste and the awakening of his intellectual ambitions. As a help to this true conception, it is recommended that a few books, dealing with the authors studied solely from the point of view of their human and literary interest, be, if possible, made accessible to the student, — such books, for example, as Froude's Cæsar (Harper & Brothers), a book of perverted eloquence, but helpful if corrected by the next to be mentioned, Forsyth's Cicero (Charles Scribner's Sons), Trollope's Cicero (Macmillan), and Sellar's Virgil (Macmillan); to which should be added the articles on Cæsar, Cicero, and Virgil in the Encyclopædia Britannica, together with Sellar's article on Roman Literature in the same place, and Wilkins's Primer of Roman Literature (Macmillan).

The text of the formal expressions of opinion of the Conference follows: —

Recommendations of the Conference upon the subject of Latin.

(1) The formal requirements in Latin at present prevailing for admission to representative colleges ought not, so far as quantity is concerned, to be increased.

(2) Education below the high school course should be so organized that students may be prepared to enter upon that course at least a year earlier than, in most places, they now do.

(3) The study of Latin should be begun, in a four-year course, not later than at the age of fourteen years, and at a correspondingly earlier age when the course is of five or six years' duration.

(4) At least four years of study, with five recitation periods a week, of not less than forty-five minutes each, should be given to the study of Latin.

(5) In case the course extends through five or six years, there should, in the interests of more thorough work, be no diminution of the time which has been suggested as a proper weekly allotment for a four-year course.

(6) While the Conference does not find itself yet prepared to declare that translation at sight from Latin into English, and from English into Latin, without examination upon the ground previously gone over, constitutes a complete and satisfactory test of the student's knowledge, as well as of the power he has gained, it strongly recommends that such twofold translation at sight form a constant and increasing part of the examination for admission *and of the work of preparation.*

(7) The Bucolics of Virgil ought henceforth to form no part of the requirements for admission.

(8) In a four-year course, four books of Caesar's Gallic War, *or an equivalent*, should be completed by the end of the second year, and six orations of Cicero and six books of the Aeneid during the third and fourth years. The Conference makes no recommendation upon the question whether Cicero should precede Virgil, or Virgil Cicero; but suggests that, if Cicero precede, four orations be read, then six books of Virgil, followed by the remaining two orations.

(9) A portion of the Lives of Cornelius Nepos should be substituted for a part or the whole of Caesar's Gallic War, and, as an introduction to the reading of these authors, such books as the Breviary of Eutropius, Gradatim, and Viri Romae, are strongly recommended.

(10) The subject of Latin should be treated in the same way, whether students intend to go to college, to a scientific school, or to neither.

(11) The writing of Latin should be carried on, throughout the preparatory course, concurrently with the reading of prose. The main training in syntax should be given in connection with work in writing Latin; and, during the reading of the text, questions upon syntax should generally be confined to points in which a clear recognition of the nature of the construction is essential to the understanding of the passage. The basis of the exercises in Latin composition should be limited portions of the text of authors read, — perhaps not more than forty or fifty pages. And, finally, the tests in writing Latin at admission examinations should be limited to the subject-matter of the authors studied in the preparatory course.

(12) Elementary books for the study of Latin should contain no sentences written in an un-Latin order.

(13) Except in unusually skilful hands, the so-called Inductive Method of teaching Latin should be used with extreme caution.[1]

(14) The importance of the elementary instruction in Latin should be emphasized, and the necessity of a high grade of scholarship in teachers of the lower classes should be strongly insisted upon.

[1] NOTE. — On the general question here involved the chairman reserves his opinion, waiting for fuller experimental evidence from the schools, and from examinations for admission.

WM. GARDNER HALE, *Professor of Latin in the University of Chicago*, Chairman.

WM. C. COLLAR, *Head-Master of the Roxbury Latin School*, Secretary.

CHARLES E. BENNETT, *Professor of Latin in Cornell University.*

FREDERICK L. BLISS, *Principal of the Detroit High School.*

JNO. T. BUCHANAN, *Principal of the Kansas City High School.*

*JOHN S. CROMBIE, *Principal of the Adelphi Academy.*

JAMES H. DILLARD, *Professor of Latin in Tulane University.*

WM. GALLAGHER, *Principal of the Williston Seminary.*

JOHN C. ROLFE, *Acting Professor of Latin in the University of Michigan.*

JULIUS SACHS, *Principal of the Collegiate Institute for Boys, New York City.*

* Mr. Crombie took an active part in the deliberations of the Conference, and later gave his assent to the Report as it here stands. His official connection with it was therefore concluded. His associates, however, desire to append a record of his untimely death on the 16th of April, 1893; and to express their deep regret at the loss of a colleague of singular thoughtfulness, tact, and charm.

GREEK.

To the Committee of Ten: —

The Conference on Greek met with every member present at Ann Arbor, Michigan, December 28th, 29th, and 30th, 1892.

In its discussions and recommendations the Conference has been guided by the existing conditions of the study of Greek in the schools and by the admission requirements of colleges, as well as by its desire to recommend some ideal plan of study. It is well known that the time and attention given to Greek vary greatly in different sections of the country, so that a recommendation that is simply a statement of the existing conditions for schools in some sections may be for a school in a less favored community — for the time — an unattainable ideal.

However unfortunate it may be thought, the fact remains that few schools will do more for their pupils in preparation for college than the college requirements for admission demand, so that the college determines in large measure the amount of work done in the school, as well as controls to some extent by the rigor or laxity of its entrance examinations the quality of the preparatory instruction.

Influenced then by these considerations, the Conference has aimed to make recommendations that may tend to unify methods of the study of Greek in the different sections of the country. The Conference would not have its recommendations regarded as restrictive in any sense; it believes that under favorable conditions more can be accomplished than the amount proposed below (secs. II., III.) — many schools are doing more to-day; but the Conference recommends an amount of work that every school can do in the time proposed. Schools that are favored in the early training of their pupils and in other ways, can accomplish more.[1]

The following votes and recommendations were made by the Conference: —

Voted: That in making the following recommendations this Conference desires that the average age at which pupils now enter college be lowered rather than raised, and the Conference urges that no addition be made to the more advanced requirements in Greek now prescribed for admission to college.

[1] The statement of a headmaster of long experience will not be without interest, as showing the possibilities of increase in the amount of work done, without extra time or a sacrifice of thorough teaching. He says that some years ago his classes read three books of Homer in the senior year; as he received pupils better trained and secured better instruction, the amount read was increased to five books; then to eight; and he hopes in the same way to increase the amount read still further.

I. Period of Study.

The Conference recommends that the study of Greek be begun at least three years before the close of the course preparatory to college, and that to the subject be given five recitations per week, of at least forty-five minutes each, the first year, four recitations per week the second year, and four recitations per week the third year.

It will be seen that the Conference recommends as a minimum school course in Greek about 490 recitation periods. Most schools in which Greek is studied during two years only, give 360–400 recitation periods to the study, so that for such schools the time recommended amounts to an increase of little more than a half-year's work. It is believed by the Conference that this increase can be made in many cases without serious difficulty. On the other hand this amount of time recommended as a minimum is less than the time already given in most schools where Greek is studied three years. Of twenty-five representative schools having three-year courses in Greek, two only give less than the minimum number of hours proposed (490), while twelve devote to Greek 550 hours or more, one school giving 658 hours in three years.

While the Conference recommends three years as the minimum time for the study of Greek in schools, it would not have a pupil begin to study the language without a knowledge of the elements of Latin; so that the Conference would limit the study of Greek to two years in a school in which Latin is studied but three.

II. Course in Attic Greek.

The Conference recommends that the course in Attic Greek consist of four books of the Anabasis, or of two books of the Anabasis and an amount of the Hellenica, or of other Attic Greek, equivalent to two other books of the Anabasis.

The members of the Conference urge that the Anabasis be no longer retained in our schools as the only text-book in Attic Greek; they feel that as the events chronicled in the Anabasis had little effect on subsequent history, it is well for pupils to read more important works. The Hellenica, especially Books I. and II., has more historic value than the Anabasis, and the narrative portions of Thucydides may well be read in schools. The Conference believes that by such substitution of portions of the Hellenica and of Thucydides the pupil's interest in his work will be increased, and that better results can be obtained.

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To the Committee of Ten: —

The Conference on Greek met with every member present at Ann Arbor, Michigan, December 28th, 29th, and 30th, 1892.

In its discussions and recommendations the Conference has been guided by the existing conditions of the study of Greek in the schools and by the admission requirements of colleges, as well as by its desire to recommend some ideal plan of study. It is well known that the time and attention given to Greek vary greatly in different sections of the country, so that a recommendation that is simply a statement of the existing conditions for schools in some sections may be for a school in a less favored community — for the time — an unattainable ideal.

However unfortunate it may be thought, the fact remains that few schools will do more for their pupils in preparation for college than the college requirements for admission demand, so that the college determines in large measure the amount of work done in the school, as well as controls to some extent by the rigor or laxity of its entrance examinations the quality of the preparatory instruction.

Influenced then by these considerations, the Conference has aimed to make recommendations that may tend to unify methods of the study of Greek in the different sections of the country. The Conference would not have its recommendations regarded as restrictive in any sense; it believes that under favorable conditions more can be accomplished than the amount proposed below (secs. II., III.) — many schools are doing more to-day; but the Conference recommends an amount of work that every school can do in the time proposed. Schools that are favored in the early training of their pupils and in other ways, can accomplish more.[1]

The following votes and recommendations were made by the Conference: —

Voted: That in making the following recommendations this Conference desires that the average age at which pupils now enter college be lowered rather than raised, and the Conference urges that no addition be made to the more advanced requirements in Greek now prescribed for admission to college.

[1] The statement of a headmaster of long experience will not be without interest, as showing the possibilities of increase in the amount of work done, without extra time or a sacrifice of thorough teaching. He says that some years ago his classes read three books of Homer in the senior year; as he received pupils better trained and secured better instruction, the amount read was increased to five books; then to eight; and he hopes in the same way to increase the amount read still further.

I. Period of Study.

The Conference recommends that the study of Greek be begun at least three years before the close of the course preparatory to college, and that to the subject be given five recitations per week, of at least forty-five minutes each, the first year, four recitations per week the second year, and four recitations per week the third year.

It will be seen that the Conference recommends as a minimum school course in Greek about 490 recitation periods. Most schools in which Greek is studied during two years only, give 360–400 recitation periods to the study, so that for such schools the time recommended amounts to an increase of little more than a half-year's work. It is believed by the Conference that this increase can be made in many cases without serious difficulty. On the other hand this amount of time recommended as a minimum is less than the time already given in most schools where Greek is studied three years. Of twenty-five representative schools having three-year courses in Greek, two only give less than the minimum number of hours proposed (490), while twelve devote to Greek 550 hours or more, one school giving 658 hours in three years.

While the Conference recommends three years as the minimum time for the study of Greek in schools, it would not have a pupil begin to study the language without a knowledge of the elements of Latin; so that the Conference would limit the study of Greek to two years in a school in which Latin is studied but three.

II. Course in Attic Greek.

The Conference recommends that the course in Attic Greek consist of four books of the Anabasis, or of two books of the Anabasis and an amount of the Hellenica, or of other Attic Greek, equivalent to two other books of the Anabasis.

The members of the Conference urge that the Anabasis be no longer retained in our schools as the only text-book in Attic Greek; they feel that as the events chronicled in the Anabasis had little effect on subsequent history, it is well for pupils to read more important works. The Hellenica, especially Books I. and II., has more historic value than the Anabasis, and the narrative portions of Thucydides may well be read in schools. The Conference believes that by such substitution of portions of the Hellenica and of Thucydides the pupil's interest in his work will be increased, and that better results can be obtained.

III. Homer.

The Conference recommends that three books of the Iliad, or its equivalent, four books of the Odyssey, be the prescribed work in Homer, suggesting that the Odyssey be preferred.

The demand is being made in some quarters that Homer be no longer studied in schools, thus limiting the study of Greek to the Attic dialect. While the Conference cannot favor this plan for schools in which Greek is studied during three years, and believes that the withdrawal of Homer from such schools would be a misfortune, it advises that schools which limit their courses in Greek to two years, make no attempt to teach Homer.

The charge that Homer is poorly taught in the schools seems to the Conference an argument against poor teaching, not against the subject taught. No one proposes to remove English Composition from the list of school studies, — and yet, if we can judge from current educational literature, men have great differences of opinion as to the best methods of teaching English Composition, as well as believe that there is much poor teaching of this subject. Poor instruction should be made the basis of attack upon the individual teacher who is at fault, or upon the wrong methods employed, not against the subject in which poor instruction is given. The Conference does recognize, however, that as a result of poor teaching a pupil may leave the preparatory school with neither the definite knowledge of Attic Greek that he can be expected to have, nor a clear understanding of the relation of the Epic to the later Classical language. This may come from an attempt to teach the pupil two dialects, whereas all instruction in Greek grammar and language should aim to fix in the pupil's mind by repetition and comparison some fundamental knowledge of Attic Greek. Homeric grammar, in the opinion of the Conference, is a subject for study in the College or University, not in the Preparatory School; the Iliad and Odyssey of all books must be studied as literature; sufficient instruction in the grammatical peculiarities of their language, however, should be given to insure a correct understanding of the text. (By continuing composition and the reading of Attic texts throughout the course the Conference seeks to avoid neglect of the Attic dialect during the study of Homer. — Sections IV. and VII.)

It appears from the experience of members of the Conference, and of others, that the prospect of reading Homer is no small inducement to pupils to study Greek; in schools where children have been encouraged to read translations of Homer, the number beginning Greek has been considerably increased. The Homeric poems appeal to the

pupil's imagination and arouse his interest in the life and thought of the Greeks. It does not seem wise to the Conference to remove these works from the schools and thereby delay the time when pupils can begin their real acquaintance with the two greatest poems the Greeks have left us. If the study of Homer is relegated to the college, many graduates of our schools, both those who do not go to college and those who fail to continue their Greek after entrance, will know nothing of Homer in the original — and probably little through translation.

The Conference holds that the Odyssey is much to be preferred to the Iliad for school boys and girls. The Odyssey deals with fairy land, enchantment, and human effort: it is a story of the same class with, and can be compared to, the Arabian Nights and Robinson Crusoe. The Iliad, on the other hand, treats of deeds that belong to Gods and heroes, the conflicts seem far from us, and lack the human interest that Odysseus' adventures have. Young children read translations of the whole Odyssey eagerly, but are interested in scattered episodes only of the Iliad.

IV. Translation into Greek.

The Conference recommends that instruction in the translation of English into Greek be based upon the Attic prose Greek read, and that simple exercises of this nature, both oral and written, based upon the lesson of the day, be frequently given; that some manual of "Greek Composition," in which connected discourse is employed and the subject of syntax is topically treated, be used; and the Conference urges that the exercises in translation into Greek be continuous throughout the preparatory course.

It is well agreed, in theory, that Greek Composition is valuable as a means to secure the better understanding of the texts read, and there is no wide difference of opinion as to the desirability of basing exercises for translation on the Attic prose read, and of holding frequent exercises in re-translation. There is, however, great variety of practice: in some schools no exercises in re-translation are given after the first book; in many schools pupils are required to use text books in which the sentences and longer exercises are based solely on the author's ingenuity and fancy; and, furthermore, exercises in Greek Composition are neither taught by the instructor nor regarded by the pupil as a regular part of the school work but as an unfortunate and useless task devised by college teachers and inflicted by college entrance requirements. The Conference, therefore, wishes to emphasise the importance of Greek Composition, and urges that it be a part of each week's work. Each teacher must decide whether a portion of each recitation hour, or a separate hour each week, shall be given to such exercises.

V. Geography, History, Etc.

The Conference recommends that in the reading of the classical texts. the Geography, History, Mythology, and Antiquities connected with the subject matter read, receive proper attention.

VI. Sight Examinations.

The Conference recommends that pupils be prepared for an entrance examination in reading simple Attic prose at sight, and the Conference suggests that as a substitute for an examination on a prescribed portion of Homer, an examination in Homer at sight, with questions on the passage set for examination, may be given.

The Conference regrets that so few colleges through their entrance examinations encourage "reading at sight" in schools. Twenty-nine colleges only offer or require sight examinations for entrance; but nine have sight examinations in Homer; in two sight tests are the only ones required. As school work is little better than college requirements compel, the amount of sight reading done in schools can be readily estimated. In most schools, it is true, spasmodic exercises are held, but comparatively few schools seem to regard "sight work" as an exercise to be constantly practised.

It is quite evident that pupils who have read only 1500 verses of Homer are not prepared for examination in Homer at sight; but those who have studied 2500 or 3000 verses, and have been steadily trained in sight reading, should be allowed to take a sight examination in place of an examination on a prescribed portion of the text, or as a supplement to it.

(In recommending entrance examinations at sight and thereby the practice of sight reading in schools, the Conference wishes to avoid an overestimate of the value of such exercise, and does not urge its practice to the exclusion of carefully prepared work. A fuller statement of the views of the Conference on this subject will be found under section X.)

VII. Division of Entrance Examinations.

The Conference recommends that the preliminary examination for college be upon the essentials of grammar (forms and syntax) and four books of the Anabasis or its equivalent; the final examination to be upon Attic prose at sight, Homer, and Greek Composition.

The Conference does not favor any examination upon grammar apart from questions suggested by the text set for translation, and urges that the questions asked aim to determine the applicant's

knowledge of the regular and more common inflections and constructions.

It is recommended that the examination in Greek Composition form part of the final examination, as the Conference believes that practice in translation into Greek should be continued throughout the school course. Since Attic Greek must be the basis of all grammatical study of Greek in schools, it follows that the reading of Attic prose ought to be continued parallel with the work in Homer and in connection with the composition exercises. By this means a model for composition is secured by the pupil, and his knowledge of Attic Greek is increased both by the reading and by the comparisons drawn between the Homeric and Attic dialects.

VIII. Different Classes of Students.

The Conference recommends that no difference be made in the treatment of Greek for the three classes of students named in the seventh question suggested by the Committee of Ten.

Before making any recommendations as to methods of teaching Greek in the preparatory course, the Conference adopted the following statement as a definition of its conception of the purpose of the study of Greek in that course:

The suggestions which the Conference has to make concerning methods of instruction in the preparatory course are primarily determined by its conception of what constitutes the distinctive work of this course. This work it conceives to be the teaching of the language of standard Attic prose through instruction in Attic grammar and reading of Attic texts, and the awakening of interest in the literature and thought of the Greeks through the reading of Homer.

IX. Introductory Work.

The Conference recommends that the work in Greek, preceding the reading of connected discourse, aim to secure for the student a mastery of the common forms of the language, facility in the use of as full a vocabulary as possible, and an acquaintance with the simpler principles of syntax.

In the opinion of the Conference a thorough knowledge of the ordinary forms of Greek words can best be obtained by the use of some manual containing the more common paradigms, short and simple sentences for translation from Greek into English and from English into Greek. and also statements of the simpler principles of Greek

syntax. The Conference urges that written as well as oral work be constantly required in the class room that both the eye and the ear may be appealed to in fixing firmly in the pupil's mind the forms of the language; and that in all exercises special attention be paid to correct pronunciation of the Greek. This Conference cannot give its approval to any scheme for imparting a knowledge of Greek inflections which contemplates the learning of them from isolated examples as they chance to occur in the connected text of a classical author. It believes that any such attempt involves unnecessary difficulties that can be easily avoided by requiring pupils to memorise together those forms that are closely connected in form and meaning, as exhibited in the paradigms usually given in text books. The Conference feels that as the time for fixing forms by repetition is limited, a logical and systematic order should be followed in their acquisition; and while the Conference believes in the use of the reasoning powers and of inductive methods in teaching language, it cannot view with favor any effort to introduce into our schools Greek text books based exclusively on the so-called "Inductive Method."

The Conference cannot urge too strongly that special attention be given to the acquisition of a vocabulary, and suggests that this may best be accomplished by a careful memorising of the vocabularies connected with the exercises and by a systematic study of groups of allied words. By a judicious selection of "root-words" and the mastery of the meaning of terminations, a vocabulary, adequate to the student's needs at this stage, may be acquired without much difficulty. Thus a necessary foundation for easy and rapid translation will be laid, and the habit — in the opinion of the Conference a very important habit — will be established of associating related words in groups, instead of regarding them as isolated and disconnected elements of the language.

This introductory work in Greek should include also a study of the simpler and more common usages of syntax. While the Conference would not have grammatical knowledge considered in any sense as an end in the study of Greek, yet it does regard such knowledge as an essential means to an end, and therefore urges that it be not neglected during the introductory period of the study. The simpler constructions of the cases of nouns and of the moods and tenses of verbs should be stated in the manual placed in the hands of the pupil. These constructions should be made familiar by repeated reference to them; but whatever is unusual, exceptional, or abstruse may well be postponed to a later period of the study. In all this work the pupil should be encouraged to draw upon his knowledge of Latin syntax for illustration and comparison.

X. Reading, Translation at Sight, and Translation Proper.

The Conference recommends that intelligent reading of the Greek text in class be regarded as an indispensable part of the work, and that for this careful preparation on the part of the student be required; that reading aloud in the class by the teacher, as well as by the pupil, be employed as a means of training the ear, and of gaining ability to grasp readily the thought of a passage; that from the outset sight translation go hand in hand with the prepared translation, and that for this purpose the text of the succeeding lesson or lessons be preferred to that of a separate work; that there be also some translation from hearing, of both prepared and unprepared work; that there be frequent practice in the reading at sight of easy passages of Greek without translation, and that, in order to be sure that the meaning of the passage is grasped, the pupil be required to state the substance of the passage read; that translation of the Anabasis, or its equivalent, be begun, at latest, in the last half of the first year, idiomatic English being demanded, and the questions on the text being asked before or after the connected translation of the whole passage, preferably before.

Reading of the Greek text is too often neglected in schools with the result that the average student on entering college cannot read a half-page of text intelligently. The reader's attention is so fully absorbed in his effort to pronounce the separate words that he gives little or no thought to the relation of the words in a sentence, or of the sentences in a paragraph. Indeed, it is not too strong a statement to say that the average pupil does not associate the reading of a sentence in Greek with the determination of the meaning of the same sentence; to his mind these are two separate processes, whereas he should regard the reading of the text as a necessary means to the understanding of the passage read. Therefore the Conference urges that reading of the text be constantly practiced by both teacher and pupil; that no attempt to translate any Greek "in advance" be made until the passage has been carefully read; and that teachers require from their pupils no less intelligent reading of the text than accurate translation of the same.

Without underestimating the discipline which is gained from the study of Greek, or disregarding the training in English obtained by careful and studied translation, the Conference conceives that one of the chief objects in the study of any language is to secure for the student the power to appreciate the form and substance of that language. The facts of a literature can be translated, but the form, the something that makes every translation of Homer or Dante inadequate, cannot be alienated from its proper language. In the opinion of the Conference, therefore, the teaching of Greek from the

first should aim to give the pupil, so far as possible, the ability to read and understand simple Greek as he reads. To obtain this power the student must, first of all, be supplied with a thorough knowledge of the common inflections and syntactical constructions of the language, and, secondly, he must gain skill in using this knowledge by reading as large amounts of text as possible. Two exercises should be constantly employed: careful preparation of text by the pupil outside the class-room and reading and translation at sight in the class. The first increases the pupil's knowledge of the language and secures to him independence in working, while "sight work" in the class gives him a free opportunity to use the knowledge he has gained, stimulates his interest, and quickens his perceptive faculties, at the same time allowing the instructor to teach the best methods of approach and imparting to the learner a sense of increasing power, — which last seems to the Conference a most important result.

As stated above, the Conference believes that reading of the text should precede any attempt at translation, and it would have a clear distinction made between the determination of the meaning of a passage and its translation. If from repeated readings of the text the meaning of the passage in hand is not clear, the pupil should be taught to approach the passage *in the order of the original*, and to determine its meaning word by word by noticing the inflectional endings, the force of compounds, and the relation of ideas implied in the position of words and phrases. Only when the meaning of a passage has been fully grasped, should the pupil be allowed to attempt a translation, and then idiomatic English should be required. The Conference believes that if translation be kept distinct from the earlier process of ascertaining the meaning of a passage, and if in translation only the best English of which the pupil is capable is accepted, the translation dialect, with its injury to the mother-tongue, can be made to disappear.

While reading at sight may fix knowledge already gained and gives skill in using such knowledge, it adds few new facts to the pupil's fund of knowledge. The meanings of words, new constructions and forms must be dwelt upon to be fixed in his memory. Therefore it is recommended that this sight practice be given on the passages which follow the day's lesson, and that the text read thus hastily form part of the succeeding day's work; by this method the new facts presented during the sight reading can be fixed in the pupil's mind by his own study.

As the teacher's main purpose in asking questions on the text is to obtain proof that the pupil understands the passage in hand and is prepared to translate it intelligently, the Conference advises that

such questions be asked before translation is begun, and, since nothing can be devised to destroy all interest in the subject matter read more thoroughly than the habit of having a lesson translated in small portions of a few lines each, the translations interrupted with questions, with no uninterrupted translation of the whole, the Conference urges that during some part of each recitation hour a connected translation of the whole lesson be made.

XI. Prosody.

The Conference recommends that in the study of Homer attention be given from the beginning to the rhythmical reading of the text; that the teaching of prosody be limited to instruction in the most essential elements in the structure of the verse; and that the pupil be taught to use the knowledge already gained from the metrical reading of Virgil.

To get an adequate appreciation of any kind of Greek poetry, it must be read rhythmically. This is especially true of the Homeric poetry, which was originally composed to be heard rather than read. The practice of translating Homer without reading the text in its metrical form ought not to be tolerated. The teacher of Homer should at the outset read the text to his pupils and enable them to appreciate the effect of a rhythmical recitation. The details of the structure of the verse will best be learned and remembered from constant practice in metrical reading.

Voted: To concur with the Latin Conference in its recommendations as to the age at which the study of Latin should be begun.

The above is respectfully submitted as the report of the Conference on Greek.

(Signed.)

MARTIN L. D'OOGE, *Professor, University of Michigan, Ann Arbor, Mich.*, Chairman.

CLIFFORD H. MOORE, *Phillips Academy, Andover, Mass.*, Secretary.

E. W. COY, *Principal of the Hughes High School, Cincinnati, O.*

A. F. FLEET, *Superintendent of the Missouri Military Academy, Mexico, Mo.*

ASHLEY D. HURT, *Head Master of the High School, Tulane University, New Orleans, La.*

ROBERT P. KEEP, *Principal of the Free Academy, Norwich, Conn.*

ABBY LEACH, *Professor, Vassar College, Poughkeepsie, N. Y.*

WILLIAM H. SMILEY, *Principal of the High School, Denver, Colo.*

CHARLES FORSTER SMITH, *Professor, Vanderbilt University, Nashville, Tenn.*

BENJ. IDE WHEELER, *Professor, Cornell University, Ithaca, N. Y.*

ENGLISH.

To the Committee of Ten: —

The Conference on the Study of English has the honor to submit the following Report: —

The Conference was called to order on Wednesday, December 28th, 1892, at quarter of eleven A.M., by Professor Allen. Principal Thurber was elected Chairman and Professor Kittredge, Secretary. The Conference remained in session till half past three o'clock Friday, December 30th, when it adjourned *sine die*. Every member was present at the deliberations and took part in debate. The results embodied in the present Report were arrived at after much discussion, and represent in all but a few points of minor importance the unanimous opinion of the Conference. The subjects which the Conference thought were included in its commission are those usually taught in schools under the names of English Language, English Grammar, Composition, Rhetoric, and English Literature. Elocution appeared to lie outside of the subjects which the meeting was convened to discuss.

The main direct objects of the teaching of English in schools seem to be two: (1) to enable the pupil to understand the expressed thoughts of others and to give expression to thoughts of his own; and (2) to cultivate a taste for reading, to give the pupil some acquaintance with good literature, and to furnish him with the means of extending that acquaintance. Incidentally, no doubt, a variety of other ends may be subserved by English study, but such subsidiary interests should never be allowed to encroach on the two main purposes just indicated. Further, though it may be necessary to consider these main purposes separately in the Report or even to separate them formally in the statement of a programme, yet in practice they should never be dissociated in the mind of the teacher and their mutual dependence should be kept constantly present to the mind of the pupils. The recommendations of the Conference should all be interpreted in accordance with these general principles, which were never lost sight of in its debates.

The recommendations of the Conference fall naturally into two divisions: (1) English in schools below the high-school grade, and (2) English in the high-school.

I. The Study of English in Schools below the High-School Grade.

If the pupil is to secure control of the language as an instrument for the expression of his thoughts, it is necessary (1) that, during the period of life when imitation is the chief motive principle in education, he should be kept so far as possible away from the influence of bad models and under the influence of good models, and (2) that every thought which he expresses, whether orally or on paper, should be regarded as a proper subject for criticism as to language. Thus every lesson in geography or physics or mathematics may and should become a part of the pupil's training in English. There can be no more appropriate moment for a brief lesson in expression than the moment when the pupil has something which he is trying to express. If this principle is not regarded, a recitation in history or in botany, for example, may easily undo all that a set exercise in English has accomplished. In order that both teacher and pupil may attach due importance to this incidental instruction in English, the pupil's standing in any subject should depend in part on his use of clear and correct English.

In addition to this incidental training, appropriate special instruction in English should form a part of the curriculum from the beginning. For convenience this special instruction may be considered under three heads: (*a*) "language" and composition, (*b*) formal or systematic grammar, (*c*) reading, or lessons in literature.

A. "*Language*" *and composition.* — During the *first two years* at school, children may acquire some fluency of expression by reproducing orally in their own words stories told them by their teachers and by inventing stories about objects and pictures.

Not later than the first term of the *third school-year* children should begin to compose in writing. To assist them in overcoming mechanical difficulties (as of punctuation, the use of capitals, etc.), they should be required to copy and to write from dictation and from memory short and easy passages of prose and verse.

From the beginning of the *third* to the end of the *sixth* school-year, "language-work" should be of three kinds:

1. Oral and written exercises in the correct employment of the forms of the so-called "irregular" verbs, of pronominal forms, and of words and phrases frequently misused.

2. Oral and written exercises in the most elementary form of composition, that is, in the construction of sentences of various kinds. The matter out of which the sentences are to be constructed may, if necessary, be supplied by the teacher; but the pupil should, from his

earliest years, be encouraged to furnish his own material, expressing his own thoughts in a natural way. The greatest care should be taken to make these exercises practical rather than technical and to avoid the errors of the old-fashioned routine method of instruction in grammar.

3. The writing of narratives and descriptions. — These exercises should begin with the *third school-year* and should be continued throughout the course. The subjects assigned should gradually increase in difficulty: in the *seventh and eighth school-years*, if not earlier, they may often be suggested by the pupil's observation or personal experience. The paraphrasing of poetry is not to be commended as an exercise in prose composition: it is often of value to require the pupil to tell or write, in his own words, the story of some narrative poem; but the reducing of lyric poetry to prose is hardly to be defended. Pains should be taken, from the outset, to enlarge and improve the child's vocabulary by suggesting to him, for the expression of his thoughts, better words than those he may himself have chosen. He should be trained to recognize when a sentence naturally closes, and should be warned against running distinct sentences together. He should also be trained to perceive the larger divisions of thought which are conventionally indicated by paragraphs. The teacher should bear in mind that the necessity of correctness in the formation of sentences and paragraphs is like the necessity of accurate addition, subtraction, multiplication, and division in mathematical work, and that composition proper, — the grouping of sentences and paragraphs, — as well as development of a central idea, should never be taught until this basis of correct sentences is attained.

Spelling should be learned incidentally, in connection with every subject studied, and not from a spelling-book.

Compositions and all other written exercises should receive careful and appropriate criticism, and the staff of instructors should be large enough to protect every teacher from an excess of this peculiarly exacting and fatiguing work.

B. Formal or systematic grammar. — Not earlier than the thirteenth year of the pupil's age the study of formal grammar, with drill in fundamental analysis, may be taken up. It should not be pursued as a separate study longer than is necessary to familiarize the pupil with the main principles. Probably a single year (not more than three hours a week) will be sufficient. Subsequently, although grammatical analysis (as an instrument of interpretation and of criticism) may properly accompany reading and the study of composition, it should not be regarded as a separate subject in the curriculum.

The teaching of formal grammar should aim principally to enable the pupil (1) to recognize the parts of speech, and (2) to analyze sentences both as to structure and as to syntax. Routine parsing should be avoided, and exercises in the correction of false syntax should be sparingly resorted to.

The study of word-analysis (etymology), — including the subjects of root-words, prefixes, and terminations — should not form a separate subject in the grammar-school course. All instruction in these matters should be incidental.

With regard to the study of formal grammar the Conference wishes to lay stress on three points: (1) a student may be taught to speak and write good English without receiving any special instruction in formal grammar; (2) the study of formal grammar is valuable as training in thought, but has only an indirect bearing on the art of writing and speaking; and (3) the teaching of formal grammar should be as far as possible incidental and should be brought into close connection with the pupil's work in reading and composition. These principles explain the considerable reduction recommended by the Conference in the amount of time allowed to this study.

C. Reading, or Lessons in Literature. — Reading-books should be of a literary character and should not attempt to teach physical science or natural history. They should make very sparing use of sentimental poetry.

From the beginning of the *third year* at school, the pupil should be required to supplement his regular reading-book with other reading-matter of a distinctly literary kind. At the beginning of the *seventh school-year* the reading-book may be discarded, and the pupil should henceforth read literature, — prose and narrative poetry in about equal parts. Complete works should usually be studied. When extracts must be resorted to, these should be long enough to possess a unity of their own and to serve as a fair specimen of an author's style and method. Children should be taught to read distinctly and with expression, but without exaggeration or mannerisms. They should be taught to comprehend the subject-matter as a whole and to grasp the significance of parts, as well as to discover and appreciate beauties of thought and expression. Due attention should be paid to what are sometimes thoughtlessly regarded as points of pedantic detail, such as the elucidation of involved sentences, the expansion of metaphors into similes and the compression of similes into metaphors, the tracing of historical and other references, and a study of the denotation and connotation of single words. Such details are necessary if the pupil is to be brought to anything but the vaguest understanding of what he reads, and there is no danger that an intel-

ligent teacher will allow himself to be dominated by them. It should not be forgotten that in these early years of his training the pupil is forming habits of reading and of thought which will either aid him for the rest of his life, or of which he will by-and-by have to cure himself with painful effort.

In the opinion of the Conference it is expedient that the English work during the last two years of the grammar-school course (including formal grammar, reading, and composition) should be in the hands of a special teacher or teachers. But the appointment of such teacher or teachers should not be held to excuse the instructors in other subjects from the oversight of the English of their pupils. It is only by cordial coöperation in all departments that satisfactory results in this direction can be obtained. To the lack of such joint effort the present unsatisfactory condition of English study in the schools and colleges may be in great part ascribed.

II. The Study of English in the High-School.

The Conference is of opinion that the study of English should be pursued in the high-school for five hours a week during the entire course of four years. This would make the total amount of available time not far from eight hundred hours (or periods).

The study of literature and training in the expression of thought, taken together, are the fundamental elements in any proper high-school course in English, and demand not merely the largest share of time and attention but continuous and concurrent treatment throughout the four years. The Conference therefore recommends the assignment of three hours a week for four years (or 480 hours in the total) to the study of literature, and the assignment of two hours a week for the first two years, and one hour a week for the last two years (or 240 hours in the total) to training in composition. By the study of literature the Conference means the study of the works of good authors, not the study of a manual of literary history.

Rhetoric, during the earlier part of the high-school course, connects itself directly, on the one hand, with the study of literature, furnishing the student with apparatus for analysis and criticism, and, on the other hand, with practice in composition, acquainting the student with principles and maxims relating to effective discourse. For this earlier stage, therefore, extending through the first two years, no assignment of hours to rhetoric has been deemed advisable, and an assignment of one hour a week in the third year (a total of 40 hours), is thought sufficient for any systematic view of rhetoric that should be attempted in the high school. It will be observed, however, that

if the teacher has borne in mind the practical uses of rhetoric in the first two years, he will have conveyed the essentials of the art (with or without references to a text-book) before the systematic view begins, so that this view will be a kind of codification of principles already applied in practice.

The history of English literature should be taught incidentally, in connection with the pupil's study of particular authors and works; the mechanical use of "manuals of literature" should be avoided, and the committing to memory of names and dates should not be mistaken for culture. In the fourth year, however, an attempt may be made, by means of lectures or otherwise, to give the pupil a view of our literature as a whole and to acquaint him with the relations between periods. This instruction should accompany, — not supersede, — a chronologically arranged sequence of authors. In connection with it a syllabus or brief primer may be used.

To the subject of Historical and Systematic (or Formal) Grammar, one hour a week in the fourth year (a total of 40 hours) may be assigned.

In the present state of text-books and teachers, the study of the History of English Language cannot, perhaps, be generally or even extensively introduced into the high schools. It is the opinion of the Conference, however, that certain parts of that study may be profitably undertaken during the last year of the high-school course, and that some systematic knowledge of the history of the language is of value to the student who goes no farther than the high school, as well as to the student preparing for college.

It is obvious that without a knowledge of Anglo-Saxon and Middle-English nothing can be accomplished by a study of the history of sound change as exemplified in derivation, word-composition, and inflections, nor can any great good come from an illustration of modern syntax through the syntax of stages of the language with which the student is unfamiliar; but, although these important branches of the subject must necessarily be reserved to a later period, it appears evident that certain other branches of the study might be pursued to advantage even by pupils who have no knowledge either of the earlier stages of English or of any foreign tongue. The Conference has in mind the following topics: —

1. *The History and Geography* of the English speaking people, so far as these illustrate the development of the English language.

2. *Phonetics.* — Though we do not recommend any study of details in the historical development of English spelling, we think it essential that every high school scholar should possess a clear idea of the general causes which have given English the peculiar value of its vowel symbols, and made them essentially different from the system

of other languages. Such study would prevent, for example, acquiescence in the common error of regarding the vowels in *rid* and *ride* as the short and the long of the same sound.

3. *Word-Composition.* — The historical study of inflections and of word-composition should not be included in this scheme. But some elementary treatment of prefixes and suffixes and of word-composition may come in incidentally. The purpose of including it, however, is rather to illustrate principles of historical development than to acquaint the pupil with a body of details.

4. *Elements of the English Vocabulary.* — This branch of English study is already pursued in some secondary schools as an independent subject, with the aid, perhaps, of such a book as Trench's "On the Study of Words"; but the view of the Conference is that it would be better to include it as a part of a systematic treatment of the history of the language. The extent to which the study of the sources of English words can be carried in any school or class will depend on the acquaintance the pupils possess with Latin, French, and German. This subject should be so pursued as to illustrate the political, social, intellectual, and religious development of the English race; and the knowledge thus obtained will be profitable to youth only in proportion as it links itself with other knowledge derived from their general reading or from their other school work.

5. *Changes in the meaning of words.* — A systematic study of development in the meaning of words should not come in as a distinct part of this plan. Such study should however, of course, be included incidentally in the interpretation of literature.

The teacher must of course be familiar with the more important facts of historical English grammar, and be able to use them in connection with the study of any branch of English, whenever they serve to explain difficulties or to fix grammatical principles. In addition to those parts of historical grammar that have been more specifically mentioned above, the following may be noted, as illustrations of the topics of this subject that may receive attention in high schools, so far as the advancement of the pupils in general linguistic study renders it advisable, and so far as time and opportunity can be found for such work: — dialects and literary language, authority and usage, decay of inflections.

It is the opinion of the Conference that the best results in the teaching of English in high schools cannot be secured without the aid given by the study of some other language, and that Latin and German, by reason of their fuller inflectional system are especially suited to this end.

The Conference wishes also to emphasize in the case of high-schools what has been already said with regard to schools of lower grade: that every teacher, whatever his department, should feel responsible for the use of good English on the part of his pupils.

The question of requirements for admission to college was carefully considered by the Conference and a definite scheme of examinations devised for recommendation to American colleges. These recommendations concern all scholars in high-schools, for the Conference is of opinion that the high-school course in English should be identical for students who intend to go to college or to a scientific school, and for those who do not, and that the requirements in English for admission to college or to a scientific school should be so adjusted as not to contravene this principle. The practice now too prevalent of maintaining one course in English for pupils who intend to go to college, another for candidates for admission to a scientific or technical school, and a third for pupils whose schooling ends with their graduation from the high-school, cannot be defended on any reasonable grounds. There is no good reason why one of these three classes of students should receive a training in their mother tongue different either in kind or in amount from that received by either of the other two classes.

The Conference is also convinced that the cause of secondary education would be materially helped if the requirements for admission to college, in English as in other subjects, were to be made uniform *in kind* throughout the country. Uniformity in amount is certainly not practicable and probably not desirable.

The specific recommendations of the Conference as to English requirements for admission to colleges and scientific schools are the following: —

1. That the reading of certain masterpieces of English literature, not fewer in number than those at present assigned by the Commission of New England Colleges, should be required.

2. Each of these should be so far as possible representative of some period, tendency, or type of literature, in order that alternative questions like those suggested in § 5 (below) may be provided. The whole number of these works selected for any year should represent with as few gaps as possible the course of English literature from the Elizabethan period to the present time.

3. Of these books a considerable number should be of a kind to be read by the student cursorily and by himself. A limited number, however, may be read in the class-room under the immediate direction of the teacher.

4. In connection with the reading of all these required books the teacher should encourage parallel or subsidiary reading and the

investigation of pertinent questions in literary history and criticism. The faithfulness with which such auxiliary work is carried on should be constantly tested by means of written and oral reports and class-room discussion, and the same tests should be applied to the required books read cursorily (see § 3).

5. The Conference doubts the wisdom of requiring, for admission to college, set essays (*e. g.*, on the books prescribed, as above, §1), — essays whose chief purpose is to test the pupil's ability to write English. It believes that there are serious theoretical and practical objections to estimating a student's power to write a language on the basis of a theme composed not for the sake of expounding something that he knows or thinks, but merely for the sake of *showing his ability to write.*

Therefore, so long as the formal essay remains a part of the admission examination, it is recommended that questions on topics of literary history or criticism, or on passages cited from prescribed works, be set as an alternative. These topics and passages should be such as (1) to bring out the knowledge of the pupil with regard to the subjects suggested in § 4, and (2) to test his ability to methodize his knowledge and to write clearly and concisely. The questions set should be so framed as to require answers of some length.[1]

6. The Conference is of opinion that in the hands of any but a highly intelligent teacher exercises in the correction of bad English may do more harm than good. And therefore the Conference believes that the correction of specimens of bad English should not form a considerable part of the admission examination,[2] though it is not prepared to recommend the exclusion of such specimens. Care should be taken that those selected are really offences against good English (not merely against good style) and, further, that they are such offences as experience has shown young writers are prone to commit. Obscure sentences and nonsensical or puzzling combinations of words should be avoided.

7. The admission of a student to college so far as English is concerned, should be made to depend largely on his ability to write English as shown in his examination-books on other subjects (such as history). If the candidate's translations from foreign languages are used for this purpose, the examiner should remember that vagueness and absurdity in such translations often result from ignorance of the foreign language rather than from incompetent knowledge of one's mother tongue, and that, further, the art of translation is a very difficult art even to a writer who is at home in both the languages

[1] Not less than a page of the examination-book.

[2] Say not more than one-fifth.

concerned. A student who in general writes well enough may, from either or both of these causes, appear to very poor advantage in an exercise in translation.

8. Though it is clear that the power to write a language can be obtained only by unremitting practice, yet, in the opinion of the Conference, such practice may properly be accompanied and illustrated by a course in elementary rhetoric. This course should include not only the principles of clearness, force, and good taste, but the principles of the arrangement of clauses in the sentence and of sentences in the paragraph. The teacher should bear in mind that any body of written English, of whatever length, is an organic unit, with principles that apply as well to the arrangement of the minor elements as to the grouping of the larger divisions of essay or book. Especial care should be taken that rhetoric is not studied by itself or for its own sake. Its connection with the pupil's actual written or spoken exercises should be kept constantly in view. The Conference therefore does not contemplate an examination in formal rhetoric as a requirement for admission to college.

9. There should be no division of the admission examination in English. When a college or scientific school allows a division of admission requirements into "preliminary" and "final," English should be a "final" subject.

10. The relative importance of the English language and literature as a subject among other requirements for admission to college is about one in six; but the Conference feels strongly that no student should be admitted to college who shows in his English examination and in his other examinations (as in § 7) that he is very deficient in ability to write good English.

May 13th, 1893.

SAMUEL THURBER, *Master of the Girls' High School, Boston, Mass.*, Chairman.

GEORGE LYMAN KITTREDGE, *Professor, Harvard University, Cambridge, Mass.*, Secretary.

EDW. A. ALLEN, *Professor, University of Missouri, Columbia, Mo.*

F. A. BARBOUR, *Principal Michigan State Normal School, Ypsilanti, Mich.*

F. A. BLACKBURN, *Professor, University of Chicago, Chicago, Ill.*

C. B. BRADLEY, *Professor, University of California, Berkeley, Cal.*

FRANCIS B. GUMMERE, *Professor, Haverford College, Pa.*

EDWARD E. HALE, JR., *Professor, University of Iowa, Iowa City, Ia.*

CHARLES L. LOOS, JR., *High School, Dayton, O.*

WM. H. MAXWELL, *Superintendent of Schools, Brooklyn, N. Y.*

OTHER MODERN LANGUAGES.

CAMBRIDGE, March 11, 1893.

TO THE COMMITTEE OF TEN:

Gentlemen, — The Conference on Modern Languages, which met in Washington on the 28th, 29th, and 30th of December, 1892, submits the following report.

C. H. GRANDGENT, *Chairman*.

A. TIME OF INTRODUCTION.

1. Wherever thoroughly competent teachers can be secured, we are of the opinion that there should be introduced into the grammar schools an elective course in German or French, open to all pupils who have arrived at the fourth year from the end. It is supposed that the average boy or girl will reach this stage at the age of ten. We make the above recommendation, not with a view to separating, at such an early period, the scholars who are likely to enter a high school or college from those who are to receive only elementary instruction, but in the firm belief that the educational effects of modern language study will be of immense benefit to all who are able to pursue it under proper guidance. It will train their memory and develop their sense of accuracy; it will quicken and strengthen their reasoning powers by offering them, at every step, problems that must be immediately solved by the correct application of the results of their own observation; it will help them to understand the structure of the English sentence and the real meaning of English words; it will broaden their minds by revealing to them modes of thought and expression different from those to which they have been accustomed. The study of Latin appears, it is true, to present these same advantages; but living languages seem to us better adapted to grammar school work, both on account of the greater ease with which they can be taught and learned, and because of their closer relation to the interests and ideas of to-day.

2. We believe that children should, if possible, begin their study of German or French by the time they are ten years old. At that age their perceptions are acute, their vocal organs are still flexible, and they are comparatively free from that morbid fear of ridicule which impedes their progress in later years; consequently they are able to acquire a tolerably correct pronunciation and make some *headway* in the practical use of the language. Moreover, their *interest is easily kindled*, and they are eager to imbibe the life and

spirit of a foreign tongue. We do not on the other hand, recommend the introduction of German or French earlier than the fifth school year, because we fear that if it were begun sooner, it would necessarily be broken off before the end of the grammar school course; and any interruption of the modern language study should, in our opinion, be carefully avoided.

3. In places where it is as yet impossible, through lack of teachers or of money, to include a modern language in the grammar school curriculum, we believe that French or German should form, from the very first, a part of the high school course; it is essential that pupils should study at least one language long enough to reach some degree of maturity in it. If, however, classes are obliged, for any reason, to begin Latin or Greek on entering the secondary school, we recommend that the study of French or German be postponed a twelvemonth; for we regard as entirely inexpedient the introduction of two foreign languages in the same year. When a minimum of French or German is offered as a supplement to a curriculum comprising two other foreign languages, the last language should be taken up in the third year.

B. Number of Lessons per Week.

4. In the grammar grade we recommend that during the first year five recitation periods per week be given to the modern language; during the second, at least four; and during each of the other two years, at least three. To be successful, the study of a new language should present a sufficient number of weekly exercises to enlist and hold the full interest of the pupils. In the case of young children, especially, it is found that more is accomplished by short but frequent lessons than by longer ones at greater intervals.

5. For the high school we make the following recommendations, which refer, of course, only to modern languages: (*a*) the first foreign language studied should be taken up at once and carried on, with four recitations a week, through all four years; (*b*) the second foreign language studied — whether the first be ancient or modern — should be begun the second year and continued, with four exercises per week, through the rest of the course; (*c*) the third foreign language studied — whatever be the nature of the other two — should be introduced in the third year and pursued, with three lessons weekly, during the last two years. In the third case the suggestion of three hours a week for two years, rather than five recitations weekly for one year, is made with a view to avoiding too much pressure during the last year, when the pupil is most likely to be overworked, and *a new subject is in greatest* danger of being slighted; under

different circumstances five exercises per week for one year might, in our opinion, give somewhat better results than three hours weekly for two.

6. It will be seen that we take for granted a high school course of four years and a primary and grammar school course extending over at least eight years. The following table shows at a glance the proposed number of modern language recitations per week during the different years mentioned in the preceding paragraphs: —

			School Year:	*1st.*	*2d.*	*3d.*	*4th.*	*5th.*	*6th.*	*7th.*	*8th.*
Elementary Schools —			First Language:					5	4	3	3
			School Year:	*1st.*	*2d.*	*3d.*	*4th.*				
Secondary Schools	Maximum		First Language:	4	4	4	4				
			Second Language:		4	4	4				
	Minimum, —		Third Language:			3	3				

In general the two maximum courses in secondary schools are supposed to cover the same ground: it is thought that the facility gained by the previous study of another language will compensate for the loss of one year. But where the elementary schools offer a German or a French course, we intend that the first language studied in the high school shall be the same one that was begun in the grammar grade; and in this case the first maximum will comprise more than the second.

C. Course of Study.

7. According to our best judgment, all pupils of the same intelligence and the same degree of maturity should be instructed alike, no matter whether they are subsequently to enter a college or scientific school, or intend to pursue their studies no further.

I. Grammar Schools.

8. It is expected that during the first two years the lessons will consist of interesting but systematic oral exercises, combined with the use of pictures and the reading of very elementary texts. The mass of knowledge thus acquired will, in the other two years, be classified, extended, and fixed in the memory by means of a larger amount of reading and a more formal study of grammatical principles. It is hoped, however, that oral work will not be neglected during any part of the course. The objects to be attained in these four years are: (*a*) a good pronunciation; (*b*) ability to understand very easy German or French when it is spoken; (*c*) ability to read, without painful effort, simple stories in the foreign language; (*d*) ability to construct short German or French sentences, applying the elementary

rules of grammar. It is the opinion of the Conference that such a course as we have outlined would, in the hands of a competent teacher, produce results of permanent value, whether the study be considered as a means of mental training or as a foundation for further work in the same line.

II. High Schools.

9. In the following paragraphs the term "elementary" will be applied to the first half of the maximum courses and to the entire minimum course (see § 6); the second half of the maximum courses will be called "advanced." The numbers of pages specified below are intended to include not only prepared work but all sight reading done in the class. Our recommendations are practically the same as those of the Commission of Colleges in New England on Admission Examinations. We are in favor of a course of study that will produce the following results: —

10. *In Elementary German.* — (*a*) Familiarity with the rudiments of grammar, and especially with these topics: the declension of articles, adjectives, pronouns, and such nouns as are readily classified; the conjugation of weak and of the more usual strong verbs; the commoner prepositions; the simpler uses of the modal auxiliaries; the elementary rules of syntax and word order. (*b*) Ability to translate at sight a passage of easy prose containing no rare words. It is believed that the requisite facility can be acquired by reading not less than two hundred duodecimo pages of simple German. (*c*) Ability to pronounce German and to recognize German words and easy sentences when they are uttered.

11. *In Advanced German.* — (*a*) Proficiency in more advanced grammar. In addition to a thorough knowledge of accidence, of the elements of word-formation, and of the principal values of prepositions and conjunctions, the scholars must be familiar with the essentials of German syntax, and particularly with the uses of modal auxiliaries and the subjunctive and infinitive modes. (*b*) Ability to translate ordinary German. It is thought that pupils can acquire this ability by reading, in all, not less than seven hundred duodecimo pages. (*c*) Ability to write in German a paragraph upon an assigned subject chosen from the works studied in class. (*d*) Ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

12. *In Elementary French.* — (*a*) Familiarity with the rudiments of grammar, and especially with these topics: the conjugation of regular and the more usual irregular verbs, such as *dire*, *faire*, and the classes represented by *ouvrir*, *dormir*, *connaître*, *conduire*, and

craindre; the forms and positions of personal pronouns; the use of other pronouns and pronominal adjectives; the inflection of nouns and adjectives for gender and number, excepting rare cases; the partitive constructions. (*b*) Ability to translate simple prose at sight. It is believed that the requisite facility can be acquired by reading not less than four hundred duodecimo pages from at least three dissimilar works. (*c*) Ability to pronounce French and to recognize French words and easy sentences when they are uttered.

13. *In Advanced French.* — (*a*) Proficiency in more advanced grammar. In addition to a thorough knowledge of accidence and of the values of prepositions and conjunctions, the scholars must be familiar with the essentials of French syntax — especially the use of modes and tenses — and with the more frequently recurring idiomatic phrases. (*b*) Ability to translate standard French. It is thought that pupils can acquire this ability by reading, in all, not less than one thousand duodecimo pages. (*c*) Ability to write in French a paragraph upon an assigned subject chosen from the works studied in class. (*d*) Ability to follow a recitation conducted in French and to answer in that language questions asked by the instructor.

14. The ability to translate at sight expected in each grade of French is greater than that required in the corresponding grade of German. The texts used in the elementary courses should consist of ordinary nineteenth century prose, judiciously varied with such short pieces of poetry as the teacher may select. In the advanced courses all the reading matter should be of high literary value. The study of classical works should be reserved until the pupil can read with ease every-day modern prose. If, however, the language has been taken up in the grammar school, the high school standard can be considerably raised, and some classical authors should be introduced at an early stage.

D. Method of Instruction.

15. The following recommendations are borrowed, in the main, from the *Synopsis of French and German Instruction* for 1890 in the high schools of Boston, Mass.: —

16. In modern language courses the efforts of teachers are naturally directed mainly toward enabling pupils to translate French and German at sight, and, ultimately, to read these languages without the interposition of English. In order to gain the necessary vocabulary, a great deal of ground must be covered: reading must, therefore, be rapid. A mistaken idea of "thoroughness" may cause the waste of much valuable time. Sight translation should begin at the very out-

set of the first year's course, and should always form an important part of the work; it should proceed as briskly as possible, the teacher lifting beginners over hard places, and showing them how to find their own way through the rest. All passages of an abstruse or technical nature should be skipped, or translated by the instructor: not a moment should be lost in contending with difficulties that have no necessary connection with the language. Frequent reviews of reading-matter are not to be recommended: the students' time can nearly always be spent much more profitably on new texts, which have the advantage of stimulating fresh interest and of enlarging the vocabulary. As long as English versions are made, teachers should insist upon idiomatic English. Pupils often think that their foreign author is "silly:" this opinion is generally due to the fact that they see him only through the medium of their own stilted or meaningless prose. Every endeavor should be made to interest scholars in the subject-matter, to make them regard their text-books as literature, not as language-mills; if a story or play moves in an unfamiliar sphere, the surroundings (including the influence of foreign customs and ideas) should be briefly but intelligibly explained beforehand; references to things unknown to the class should be made clear; the beginnings and ends of lessons should coincide with natural breaks in the narrative.

17. The chief object of our modern language courses is, as has been said, the ability to read French and German; but to do this reading intelligently, the student must know more than the definitions of the words he sees; he must be able to imagine the phrases coming from the lips of a Frenchman or a German — he must know how they sound to a native hearer, and how they put themselves together in the mind of a native speaker. Something that approaches this knowledge can be acquired by practice in pronunciation, conversation, and composition. The translation into the foreign language of carefully graded sentences, based on the texts read, should be carried on from the very beginning; and as early as possible connected passages should be used, in order to cultivate good habits in the choice of connectives and the construction of sentences. Aside from set conversational exercises, the foreign language should be used as much as possible in the class-room. In the first year the pupil can catch by ear the names of familiar things and many common phrases; during the second he ought to form sentences himself; and in the third the recitations should, if the instructor has a practical command of French or German, be conducted mainly in that language. In teaching foreign sounds great care must be taken lest the scholar confirm himself in bad habits: uncorrected pronouncing is as bad as none. As

often as may be, the beginners should speak the sentences immediately after the teacher; a very little careful practice of this kind will do more good than any amount of original pronunciation by the pupil. The reading aloud of the French or German text should, in the lower classes, follow rather than precede the translation; otherwise it will be done blindly.

18. A thorough acquaintance with the leading facts of grammar is, of course, a necessary element in the acquisition of a foreign tongue. Grammatical abstractions should, however, not be forced upon the pupil too early. Difficulties can best be overcome by taking them one at a time. In studying language the three enemies that the novice must encounter are pronunciation and spelling, vocabulary, and grammar: singly they can be mastered; united they are likely to prove too strong. High school teachers are, therefore, advised, during the first third of the beginners' year, to devote the recitation hour mainly to sight reading, calling attention to the most important points of grammar as they occur. For his prepared lessons the scholar would meanwhile be learning by heart the inflections of the language, and repeating the translations made in the class. The rules of grammar and the exercises illustrating them should not be formally studied until the pupil has, by some three months' reading, gained a little insight into his French or German. Grammar exercises consisting of German or French sentences to be translated into English are to be done with the books closed, the scholar repeating the original sentence after the teacher, and then turning it into English.

19. In recommending the above course, we do not wish to be understood as implying disapproval of the so-called "natural method," which has, under favorable conditions, been pursued with marked success by teachers peculiarly adapted to that kind of instruction. We do not believe, however, that such methods can be generally applied.

E. College Requirements.

20. It is our opinion that college requirements for admission should coincide with the high school requirements for graduation, as described in §§ 10–13. If the college examination is divided, we recommend that the preliminary test cover our elementary, and the final our advanced course.

21. An examination in elementary French or German ought, in our judgment, to consist of: (*a*) the translation at sight of a passage of ordinary difficulty from the foreign language into English; and (*b*) the turning into French or German of simple English sentences immediately illustrative of the first principles of grammar, the vocab-

ulary of these sentences to be taken, as far as possible, from the foreign text set for translation.

22. As a test in advanced French or German we suggest: (*a*) the translation at sight of a passage of high literary quality from the foreign language into English; and (*b*) the turning into French or German of a connected passage of simple English prose.

F. Spanish.

23. The recommendations we have made for French and German apply also to Spanish and to any other modern language that may be introduced into high or grammar schools.

G. Preparation of Teachers.

24. The worst obstacle to the progress of modern language study is the lack of properly equipped instructors. There seems to be at present no institution where persons intending to teach German, French, or Spanish in our elementary or secondary schools can receive the special preparation they need. It is the sense of the Conference that universities, states, or cities should provide opportunities for such training.

CHARLES H. GRANDGENT, *Director of Modern Language Instruction in the Public Schools, Boston, Mass.*, Chairman.

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WALTER D. TOY, *Professor, University of North Carolina, Chapel Hill, N. C.*

MATHEMATICS.

March, 1893.

To President Charles W. Eliot, Chairman Committee of Ten, National Council of Education: —

Sir, — The undersigned, having been appointed by your Committee to hold a Conference on the subject of secondary instruction in Mathematics, have the honor to report that such Conference was held on the 28th, 29th, and 30th of December, 1892, in Cambridge, Mass.

On mapping out its work, the Conference found that the general subject of secondary mathematics might be conveniently considered under four different heads. It is deemed advisable to preface the separate reports on each of these heads with a general statement of the conclusions reached by the Conference. The following five reports are therefore submitted:

I. General statement of conclusions.
II. Special report on the teaching of arithmetic.
III. Special report on the teaching of concrete geometry.
IV. Special report on the teaching of algebra.
V. Special report on the teaching of formal geometry.

Very respectfully,

SIMON NEWCOMB, *Professor, Johns Hopkins University, Baltimore, Md.*, Chairman.

WILLIAM E. BYERLY, *Professor, Harvard University, Cambridge, Mass.*, Vice Chairman.

ARTHUR H. CUTLER, *Principal of a Private School for Boys, 20 East 50th Street, New York City*, Secretary.

FLORIAN CAJORI, *Professor, Colorado College, Colorado Springs, Colo.*

HENRY B. FINE, *Professor, College of New Jersey, Princeton, N. J.*

W. A. GREESON, *Principal of the High School, Grand Rapids, Mich.*

ANDREW INGRAHAM, *Swain Free School, New Bedford, Mass.*

GEORGE D. OLDS, *Professor, Amherst College, Amherst, Mass.*

JAMES L. PATTERSON, *Lawrenceville School, Lawrenceville, N. J.*

T. H. SAFFORD, *Professor, Williams College, Williamstown, Mass.*

I. General Statement of Conclusions.

The Conference was, from the beginning of its deliberations, unanimously of opinion that a radical change in the teaching of arithmetic was necessary. Referring to the special report on that subject for a statement of the reasons on which its conclusion is based, the conference recommends that the course in arithmetic be at the same time abridged and enriched; abridged by omitting entirely those subjects which perplex and exhaust the pupil without affording any really valuable mental discipline, and enriched by a greater number of exercises in simple calculation and in the solution of concrete problems.

Among the subjects which should be curtailed, or entirely omitted, are compound proportion, cube root, abstract mensuration, obsolete denominate quantities, and the greater part of commercial arithmetic. Percentage should be rigidly reduced to the needs of actual life. In such subjects as profit and loss, bank discount, and simple and compound interest, examples not easily made intelligible to the pupil should be omitted. Such complications as result from fractional periods of time in compound interest are useless and undesirable. The metric system should be taught in applications to actual measurements to be executed by the pupil himself; the measures and weights being actually shown to, and handled by, the pupil. This system finds its proper application in the course which the Conference recommends in concrete geometry.

The method of teaching should be throughout objective, and such as to call into exercise the pupil's mental activity. The text-books should be subordinate to the living teacher. The illustrations and problems should, so far as possible, be drawn from familiar objects; and the scholar himself should be encouraged to devise as many as he can. So far as possible, rules should be derived inductively, instead of being stated dogmatically. On this system the rules will come at the end, rather than at the beginning, of a subject.

The Conference at the same time insists upon the importance of practice in quick and accurate reckoning. The scholar should be thoroughly trained in performing correctly and rapidly the four fundamental operations with integers, vulgar fractions and decimals.

The course in arithmetic thus mapped out should begin about the age of six years, and be completed at the end of the grammar school course, say about the thirteenth year of age. The conference does not feel competent to decide how many hours a week should be devoted to it, and therefore leaves this question to teachers and other school authorities.

The second recommendation of the Conference is that a course of instruction in concrete geometry, with numerous exercises, be introduced into the grammar school. The object of this course would be to familiarize the pupil with the facts of plane and solid geometry, and with those geometrical conceptions to be subsequently employed in abstract reasoning. During the early years the instruction might be given informally, in connection with drawing, and without a separate appointment in the school calendar; after the age of ten years, one hour per week should be devoted to it.

While the systematic study of algebra should not begin until the completion of the course in arithmetic, the Conference deems it necessary that some familiarity with algebraic expressions and symbols, including the methods of solving simple equations, should be acquired in connection with the course in arithmetic. From the age of fourteen, systematic algebra should be commenced, and should be studied for five hours a week during the first year, and for about two hours and a half a week during the two years next succeeding.

The Conference is of opinion that the subject of reckoning in algebra should receive more attention than it actually does, and that the same skill and accuracy shonld be required in dealing with literal as with numerical coefficients and exponents. It strongly urges that when, as must sometimes be the case, the scholar has occasion to learn and use propositions before he is prepared to understand their rigorous demonstration, he should be convinced of their truth by abundant concrete illustrations and examples, instead of being allowed to accept them as empirical conclusions, or to found them on demonstrations that lack rigor.

The Conference believes that the study of demonstrative geometry should begin at the end of the first year's study of algebra, and be carried on by the side of algebra for the next two years, occupying about two hours and a half a week. It believes that if the introductory course in geometry has been well taught, both plane and solid geometry can be mastered at this time.

Exercises in constructing demonstrations of theorems in plane geometry will naturally occupy much of the attention of teacher and pupil. The Conference deems it very important that great stress be laid by the teacher upon accuracy of statement and elegance of form in such demonstrations, as well as on clear and rigorous reasoning. Special attention should be given to the oral statement of demonstrations.

It is very desirable that colleges should supplement their written admission examinations in geometry by oral ones; and a substantial part of the examination, whether written or oral, should be devoted

to testing the ability of the candidate to construct original demonstrations.

Finally, the Conference is of opinion that up to the completion of the first year's work in algebra, the course should be the same, whether the pupils are preparing for college, for scientific schools, or intend their systematic education to end with the high school. In the case of those who do not intend to go to college, but to pursue a business career, the remainder of the term which has been allotted to algebra might well be devoted to book-keeping, and the technical parts of commercial arithmetic. Boys going to a scientific school might profitably spend a year on trigonometry and some of the higher parts of algebra, after completing the regular course in algebra and geometry.

II. Special Report on Arithmetic.

Among the branches of this subject which it is proposed to omit, are some which have survived from an epoch when more advanced mathematics was scarcely known in our schools, so that the course in arithmetic was expected to include all that the pupil would ever know of mathematics. Examples of these subjects are cube root, duo decimals, and compound proportion. Their teaching serves no useful purpose at the present time. So far as any useful principles are embodied in them, they belong to algebra, and can be taught by algebraic methods with such facility that there is no longer any sound reason for their retention in the arithmetical course.

The case is different with commercial arithmetic. The subjects taught under this head have been greatly multiplied and enlarged in recent years, in consequence of the popular demand for a system of education which should be more practical and better suited to the demands of modern commercial and business life, than the old one was supposed to be. It may be well that those pupils of our business colleges who are mature enough to understand such subjects as banking, insurance, discount, partial payments, equation of payments, and the other branches commonly included under the term commercial arithmetic, and who have no expectation of taking any other mathematical course than this, should study these subjects exhaustively. But the case is different with pupils who are going through the courses of our regular graded schools. For them the subjects in question have no practical value, for the reason that they are too young and inexperienced to understand the principles on which business is conducted, and therefore waste valuable mental energy in fruitless struggles with problems which they cannot compre-

hend. In the text-books we find the subjects in question prefaced by very excellent definitions. The pupil who masters them will be able to state on examination that "the market value of stock is what the stock brings per share when sold for cash"; that "stock is at a discount when its market value is less than its par value"; that "its par value is that named in the certificate"; that "the payee of a bill of exchange is the person to whom the money is ordered to be paid"; in fine, to state in brief sentences the first principles of commercial law. He may also, after much conjecturing, be able to solve many questions in banking, exchange, insurance, and custom-house business. But until he is brought into actual contact with the business itself, he can form no clear conception of what it all means, or what are the uses or applications of the problems he is solving. On the other hand, when he is once brought face to face with business as an actuality; when for the first time he becomes a depositor in a savings bank, or a purchaser of shares in a corporation, he will find all the arithmetic necessary for his purposes to be interest, discount, and percentage. The conceptions which he vainly endeavored to master by recitations from a text-book take their places in his mind with hardly the necessity of an effort on his part.

The opinion is widely prevalent that even if the subjects are totally forgotten, a valuable mental discipline is acquired by the efforts made to master them. While the Conference admits that, considered in itself, this discipline has a certain value, it feels that such a discipline is greatly inferior to that which may be gained by a different class of exercises, and bears the same relation to a really improving discipline that lifting exercises in an ill-ventilated room bear to games in the open air. The movements of a race horse afford a better model of improving exercise than those of the ox in a tread-mill. The pupil who solves a difficult problem in brokerage may have the pleasant consciousness of having overcome a difficulty, but he cannot feel that he is mentally improved by the efforts he has made. To attain this end he must feel at every step that he has a new command of principles to be applied to future problems. This end can be best gained by comparatively easy problems, involving interesting combinations of ideas.

Most of the improvements which the Conference has to suggest in teaching can be summed up under the two heads of giving the teaching a more concrete form, and paying more attention to facility and correctness in work. The relations of magnitudes should, so far as possible, be represented to the eye. The fundamental operations of arithmetic should not only be performed symbolically by numbers, but practically, by joining lines together, dividing them into parts,

and combining the parts in such a way as to illustrate the fundamental rules for multiplication and division of fractions. A pupil can learn to divide a line into parts more easily than he can master definitions; and when this is done he has a conception of fractions which he cannot gain in any other way. The visible figures by which principles are illustrated should, so far as possible, have no accessories. They should be magnitudes pure and simple, so that the thought of the pupil may not be distracted and that he may know what feature of the thing represented he is to pay attention to. The elementary theorems of arithmetic should be enforced and illustrated in the same way, without an attempt at formal demonstration, the generalization being reached inductively. Thus, when the pupil comprehends clearly, by means of dots arranged in a rectangle, that three fives contain the same number of units as five threes, that is, when he sees that the commutative law is true, then it may be expressed to him in the general form, $a \times b = b \times a$.

The concrete system should not be confined to principles, but be extended to practical applications in mensuration and physics. Measurements of the room, the house, and the yard; the calculation of the weights of visible objects, or of the number of articles that a given receptacle will hold; the computation of distances and areas in the town, by measures on a map of known scale, of the number of cubic feet in a room, and of the weight of the air which fills the room, are examples of problems which can be extended by the teacher indefinitely. The simple operations of arithmetic can be better exemplified by problems set on the spur of the moment, and springing naturally from the environment of teacher and pupil, than by those given in a printed book; and have the inestimable advantage of exciting the interest of the pupil.

When such a system of teaching is once introduced, the teacher will probably be surprised to find to what seemingly abstruse problems the simplest principles of arithmetic can be applied. The problem of computing the quantity of coal which would have to be burned in order to heat the air of a room from the freezing point to 70° would probably be beyond the powers of all our college graduates, except those who have made physics one of their specialties. Yet there is nothing in its elements above the powers of a boy of twelve. At this age the child could, by a few very simple experiments, gain the idea of a quantity of heat much more easily than the idea of stock in a corporation. Having gained this, the elements which enter into the problem in question could be measured one by one.

III. Special Report on Concrete Geometry.

The Conference recommends that the child's geometrical education should begin as early as possible; in the kindergarten, if he attends a kindergarten, or if not, in the primary school. He should at first gain familiarity through the senses with simple geometrical figures and forms, plane and solid; should handle, draw, measure, and model them; and should gradually learn some of their simpler properties and relations. It is the opinion of the Conference that in the early years of the primary school this work could be done in connection with the regular courses in drawing and modelling without requiring any important modification of the school curriculum.

At about the age of ten for the average child, systematic instruction in concrete or experimental geometry should begin, and should occupy about one school hour per week for at least three years. During this period the main facts of plane and solid geometry should be taught, not as an exercise in logical deduction and exact demonstration, but in as concrete and objective a form as possible. For example, the simple properties of similar plane figures and similar solids should not be proved, but should be illustrated and confirmed by cutting up and re-arranging drawings or models.

This course should include among other things the careful construction of plane figures, both by the unaided eye and by the aid of ruler, compasses and protractor; the indirect measurement of heights and distances by the aid of figures carefully drawn to scale; and elementary mensuration, plane and solid.

The child should learn to estimate by the eye and to measure with some degree of accuracy the lengths of lines, the magnitudes of angles, and the areas of simple plane figures; to make accurate plans and maps from his own actual measurements and estimates; and to make models of simple geometrical solids in pasteboard and in clay.

Of course, while no attempt should be made to build up a complete logical system of geometry, the child should be thoroughly convinced of the correctness of his constructions and the truth of his propositions by abundant concrete illustrations and by frequent experimental tests; and from the beginning of the systematic work he should be encouraged to draw easy inferences, and to follow short chains of reasoning.

From the outset the pupil should be required to express himself verbally as well as by drawing and modelling, and the language employed should be, as far as possible, the language of the science, and not a temporary phraseology to be unlearned later.

It is the belief of the Conference that the course here suggested, if skilfully taught, will not only be of great educational value to all children, but will also be a most desirable preparation for later mathematical work.

Then, too, while it will on one side supplement and aid the work in arithmetic, it will on the other side fit in with and help the elementary instruction in physics, if such instruction is to be given.

IV. Special Report on Algebra.

It is desirable, during the study of arithmetic, to familiarize the pupil with the use of literal expressions and of algebraic language in general. The teacher may advantageously introduce the simple equation in the study of proportion, of the more difficult problems in analysis, and of percentage and its applications. The designation of positive integral powers by exponents may also be taught.

Avoiding the introduction of negative numbers, the pupil should be drilled in easy problems like the following:

If one stone weighs p pounds and another weighs q pounds, what is the weight of both together?

If a square table is a feet long, what is its area?

If a yards of cloth cost b dollars, what will c yards cost?

Such exercises should grow out of similar ones involving numerical data.

The average pupil should be prepared to undertake the study of formal algebra at the beginning of the fourteenth year. For students preparing to enter college, the time assigned to this study in the high school should be about the equivalent of five hours per week during the first year, and an average of two hours and a half per week during the two following years. This affords ample time for the thorough mastery of algebra through quadratic equations and equations of quadratic form. The course should include radicals, but exclude the progressions, series, and logarithms, although a familiarity with logarithmic tables is desirable for those who expect to take a technical course in any department.

There are certain propositions in algebra the rigorous demonstration of which is unintelligible to pupils at the time when these propositions are first encountered. Such is usually the case with the rule of signs in multiplication and with the binomial formula. In cases of this kind the proof should be at first omitted, but always introduced at a later period in school or college. When such omissions are made, the pupil must be convinced of the truth of the

propositions by illustration or induction. In many of our text-books the proofs of the theorems above referred to are not rigorous. The truth of the binomial formula for fractional or negative exponents had best be reserved for the more advanced courses in college or the scientific school. In case of positive integral exponents the pupil should arrive at the mode of expansion through the examination of products obtained by actual multiplication.

Oral exercises in algebra, similar to those in what is called "mental arithmetic," are recommended. Such exercises are particularly helpful in conducting brief and rapid reviews. Quickness and accuracy in both oral and written work should be rigidly enforced. The same facility should be attained in dealing with expressions containing coefficients and exponents that are literal as with expressions in which they are numerical. Radicals and fractional and negative exponents need more attention than they commonly receive. Especial emphasis should be laid upon the fundamental nature of the equation. The distinction should be clearly and repeatedly drawn between the ordinary algebraic equation and the identities with which the pupil has grown familiar in his study of arithmetic. He should also be given drill in the solution of an ordinary equation with reference to any letter that it may contain.

V. Special Report on Demonstrative Geometry.

In regard to the teaching of formal geometry the Conference invites attention to the following considerations:

1. A course of study in demonstrative geometry properly begins with a careful and exhaustive enumeration of those properties of space which do not admit of being deduced from still simpler properties; that space is continuous and of three dimensions; that figures may be moved about in it without change of size or shape; that straight lines and planes may exist in space, determined by two and three points respectively; that of two intersecting straight lines but one can be parallel to a given straight line — the so-called geometric axioms.

It is of the first importance that the role which these axioms — or better, postulates — play in the demonstrative geometry be correctly understood: together they constitute a *definition of space*, from which — with certain formal definitions of figures — it is the business of demonstrative geometry to deduce all other facts regarding space with which it may concern itself.

2. The function of the construction postulates also, by which the elementary geometry is restricted in its constructions to the use of

the compasses and ungraduated straight-edge, merits careful exposition, inasmuch as these postulates define the province of the elementary as distinguished from higher geometry. That it is not always understood is obvious from conceptions which are current as to what is and what is not allowable in the elementary geometry.

3. There are two methods employed in geometry for dealing with size-relations among the geometric magnitudes, the methods of immediate comparison of the magnitudes, and of comparison by means of their numerical measure. Thus the theorem, "the square on the sum of two lines is equal to the sum of the squares on those lines plus twice their rectangle," is demonstrated after the first method by showing that the square on the sum may be actually divided into these four parts; after the second, by deducing it from the algebraic theorem that the square of the sum of two quantities is equal to the sum of the squares of those quantities plus twice their product.

The first method is purely geometrical. None of its notions are arithmetical. Magnitudes are defined as equal when they can be made to coincide, they are added and substracted geometrically — by juxtaposition and separation — and their ratios are not expressed numerically but, like the magnitudes themselves, compared directly. The second method, on the other hand, is essentially arithmetical. Replacing the magnitudes by their measures, it at the same time replaces geometric equality, addition and substraction by the equality, addition and substraction of irrational numbers.

Opinions differ as to what the relative prominence of these two methods should be in elementary geometry. But, the first method being pure and thoroughly elementary and involving no abstraction, is surely better suited to the beginner. Indeed the student is most likely to become a sound geometer who is not introduced to the notion of numerical measures until he has learned that geometry can be developed independently of it altogether. For this notion is subtle, and highly artificial from a purely geometrical point of view and its rigorous treatment is difficult. The student generally only half comprehends it, so that for him demonstrations lose more in rigor as well as in vividness and objectivity by its use than they gain in apparent simplicity. Moreover the constant association of number with the geometric magnitudes as one of their properties tends to obscure the fundamental characteristic of these magnitudes — their continuity.

The numerical method is of course to be taught — with due attention to its rigorous presentation — for its own sake and for the sake of the mensuration to which it leads; but serious harm is done by

allowing it to entirely supplant the pure method at as early a period as is customary.

4. Many students who can reason logically cannot present a geometrical demonstration orally with due elegance of form. Their statement of the argument is incomplete or illogical, or they express themselves in an awkward and inexact manner. This is a fault which may render the recitation of the proofs of geometry practically valueless, inasmuch as it prevents the discipline for which this exercise is chiefly prized, and cultivates instead the vicious habit of slovenly expression. It is due in part to the willingness of certain teachers to accept in lieu of the demonstration of a proposition any kind of evidence that the pupil understands it, in part to the widespread practice of substituting written for oral demonstration. The remedy is obvious: abundance of oral recitation — for which there is no proper substitute — and the rejection of all proofs which are not formally perfect.

5. The elementary ideas of logic may be introduced early in the course in demonstrative geometry with great advantage. One need only explain that if a class of things be represented by a symbol, say A, all things not belonging to this class may also be thought of as constituting a class, represented by the symbol *not A;* and that the proposition *A is B* is not a declaration of the equivalence of A and B, but that every individual of the class A belongs to the class B — to make it easily understood why the converse proposition *B is A* is not a necessary consequence of *A is B* and under what conditions it becomes such a consequence; and why, on the other hand, the "contrapositive" *not B is not A* is the logical equivalent of *A is B* and the "obverse" *not A is not B* of *B is A*.

Yet this little knowledge would add materially to the student's equipment for geometry. The contrapositive of a proposition is oftentimes more readily demonstrated than the proposition itself, its obverse than its converse; and when it has been proven that *A is B* it is often easier to show that there is but one B (when such is the case) than to show directly that *B is A*.

This knowledge, furthermore, is seriously needed to dispel existing confusion. For many students have a strong, though of course unformulated conviction — with apparently a good deal to justify it — that the logic of algebra is quite distinct from the logic of geometry, and both from the logic of ordinary correct thinking. Without a knowledge of the conditions under which the truth of the converse of a demonstrated proposition may be immediately inferred, for instance, it is difficult to see how the student is to reconcile the need of demonstrating converses in geometry with the practice which is com-

mon in algebra of establishing a proposition by proving its converse — as in proving the truth of an algebraic relation by showing that it leads to an identity.

Finally the very fact that demonstrative geometry is the most elaborate illustration of the mechanism of formal logic in the entire curriculum of the student, makes the consideration of these elementary principles of logic more interesting and profitable in this connection than in any other.

6. As soon as the student has acquired the art of rigorous demonstration, his work should cease to be merely receptive. He should begin to devise constructions and demonstrations for himself.

Geometry cannot be mastered by reading the demonstrations of a text book; and while there is no branch of the elementary mathematics in which purely receptive work, if continued too long, may lose its interest more completely, there is also none in which independent work can be made more attractive and stimulating. It possesses remarkable qualifications for quickening and developing creative talent. Its materials are a few simple, concrete, and easily apprehended notions which admit of numberless interesting and valuable combinations, some very simple, some very complex. The lack of general methods is the weakness of elementary geometry as a science. Each theorem must be demonstrated for itself by a process differing in some respect from that followed in the case of every other. But the invention of these processes — unimportant as they may be individually — is an intellectual exercise as much higher than the mechanical illustration of some powerful and general method — which is all that the ordinary exercises of elementary algebra involve — as it is lower than the discovery of a new truth by aid of such a method.

At the same time this characteristic of the elementary geometry makes the acquisition of any considerable degree of skill in independent geometrical work difficult. It requires abundant practice in exercises which have been carefully graduated and adapted to the abilities of the individual student. In particular it is important that the student should comprehend that, notwithstanding the rigorously synthetic form of its demonstrations, the method of investigation in elementary geometry, as in all science, is essentially analytic — that the clue to a demonstration or construction is most likely to be found by assuming it accomplished and tracing its consequences until results previously established have been deduced from it.

By wise instruction after this method, the inferior student can at least be freed from slavish dependence on his text book, while the able student will gain power enough in large part to construct his

own geometry. But whatever the training may accomplish for him geometrically, there is no student whom it will not brighten and strengthen intellectually as few other exercises can.

7. It is desirable, if feasible, that solid as well as plane geometry be studied in preparation for college.

A place should also be found either in the school or college course for at least the elements of the modern synthetic or projective geometry. It is astonishing that this subject should be so generally ignored, for mathematics offers nothing more attractive. It possesses the concreteness of the ancient geometry without the tedious particularity, and the power of analytical geometry without the reckoning, and by the beauty of its ideas and methods illustrates the esthetic quality which is the charm of the higher mathematics, but which the elementary mathematics in general lacks.

PHYSICS, CHEMISTRY, AND ASTRONOMY.

To the Committee of Ten:

The Conference on Physics, Chemistry, and Astronomy, met on December 28, 1892, in Chicago. Its first session was held at 10 A.M. in a room of the University of Chicago provided for the purpose. Shortly after the appointed hour all the ten members were present, — Mr. George W. Krall, of St. Louis, presenting himself as the accredited substitute for Mr. W. C. Peckham, of Brooklyn.

The Conference organized at once by the election of Professor Ira Remsen as Chairman, and Mr. I. W. Fay as Secretary.

Morning and afternoon sessions were held for three days. At the end of the second day two members, Professor Payne, of Minnesota, and Mr. Gage, of Boston, were obliged to leave, and those remaining continued the work to the end.

The results of the deliberations of this Conference will be found embodied in the following resolutions, which have been arranged as far as possible in the order corresponding to the list of questions suggested by your committee.

This Conference recommends: —

1. That the study of simple natural phenomena be introduced into the elementary schools and that this study, so far as practicable, be pursued by means of experiments carried on by the pupil; also that in connection therewith, in the upper grades of these schools, practice be given in the use of simple instruments for making physical measurements.

2. That, wherever this is possible, special science-teachers or superintendents be appointed to instruct the teachers of elementary schools in methods of teaching natural phenomena.

[While no resolution was passed in regard to the amount of time to be devoted to the study of natural phenomena in the elementary schools, it was the sense of the Conference that at least one period per day be given to such study.]

3. That the study of Chemistry should precede that of Physics in high-school work.

4. That the study of Physics be pursued the last year of the high school course.

5. That the study of Chemistry be introduced into the secondary schools in the year preceding that in which Physics is taken up.

6. That at least 200 hours be devoted to the study of Physics in the high school.

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6. That at least 200 hours be devoted to the study of Physics in the high school.

7. That at least 200 hours be given to the study of Chemistry in the high school.

8. That both Physics and Chemistry be required for admission to college.

9. That Astronomy be not required for admission to college.

10. That when the high school course is four years, an elective in Astronomy be offered. Time — five recitations per week during a period of twelve weeks.

11. That there should be no difference in the treatment of Physics, Chemistry, and Astronomy, for those going to college or scientific school, and those going to neither.

12. That the study of Astronomy should be by observation as well as by class-room instruction.

13. That in secondary schools Physics and Chemistry be taught by a combination of laboratory work, text-book, and thorough didactic instruction carried on conjointly, and that at least one-half of the time devoted to these subjects be given to laboratory work.

14. That laboratory work in Physics should be largely of a quantitative character.

15. That careful note-book records of the laboratory work in both Physics and Chemistry should be kept by the student at the time of the experiment.

16. That the laboratory work should have the personal supervision of the teacher at the laboratory desk.

17. That the laboratory record should form part of the test for admission to college, and that the examination for admission should be both experimental and either oral or written.

18. That in the subjects dealt with by this Conference there be no separation of the examinations into preliminary and final.

19. It was further resolved that it is the opinion of this Conference that the admission to college by means of certificates from approved schools is the ideal method.

20. That in the opinion of this Conference it is better to study one subject as well as possible during the whole year than to study two or more superficially during the same time.

21. That in the instruction in Physics and Chemistry it should not be the aim of the student to make a so-called rediscovery of the laws of these sciences.

22. That a committee to consist of Mr. Fay and Mr. Krall have charge of making out a list of 50 experiments in Physics, and 100 experiments in Chemistry, to be subject to the approval of the Conference.

The above resolutions were carried unanimously, with one exception, and in this case with but one dissenting vote.

Each one of the resolutions was fully discussed and the discussions showed clearly that the members of the Conference were, in the main, in hearty accord. Every member evidently felt strongly that the ordinary method of secondary education that ignores the study of nature is highly objectionable. The study of books is well enough and undoubtedly important, but the study of things and of phenomena by direct contact must not be neglected. If it is conceded that the study of scientific methods is important, then it appears evident that in the early stages of education the mind should be prepared for this kind of study, and not rendered unfit for it. Therefore the Conference passed the first resolution.

But it would be impossible at present to provide a sufficient number of properly qualified teachers for elementary work in science, and for a time, at least, it would be necessary to instruct the teachers. To this end, Resolution 2 provides for the appointment of special science superintendents, who should have supervision over the elementary work in science, somewhat as the superintendents of drawing have over their branch of work.

As regards Resolutions 3, 4, and 5, it should be said that the order recommended for the study of Chemistry and Physics is plainly not the logical one, but all the members with one exception voted for Resolution 3 because they felt that the pupils should have as much mathematical knowledge as possible to enable them to deal satisfactorily with Physics, while they could profitably take up elementary Chemistry at an earlier stage.

Resolution 13 is an important one. It requires no argument to show that the study of a text-book of Chemistry or of Physics without laboratory work cannot give a satisfactory knowledge of these subjects, and cannot furnish scientific training. Such study is of little, if any, value. On the other hand, the mere performing of experiments in a laboratory, however well equipped the laboratory may be, cannot accomplish what is desired. Further, a pupil may work conscientiously in the laboratory, and study his text-book thoroughly, and yet receive a very inadequate training. He needs an intelligent teacher to aid him in interpreting the statements of the book and the phenomena observed, as well as to show him how to work. Loose work in the laboratory is as harmful as loose work in the class-room, and much of the laboratory work done in schools, as well as in colleges, is loose work. The great majority of pupils are sure to do bad work unless carefully guided. In mathematics and the languages accuracy can be secured, and is secured,

7. That at least 200 hours be given to the study of Chemistry in the high school.

8. That both Physics and Chemistry be required for admission to college.

9. That Astronomy be not required for admission to college.

10. That when the high school course is four years, an elective in Astronomy be offered. Time — five recitations per week during a period of twelve weeks.

11. That there should be no difference in the treatment of Physics, Chemistry, and Astronomy, for those going to college or scientific school, and those going to neither.

12. That the study of Astronomy should be by observation as well as by class-room instruction.

13. That in secondary schools Physics and Chemistry be taught by a combination of laboratory work, text-book, and thorough didactic instruction carried on conjointly, and that at least one-half of the time devoted to these subjects be given to laboratory work.

14. That laboratory work in Physics should be largely of a quantitative character.

15. That careful note-book records of the laboratory work in both Physics and Chemistry should be kept by the student at the time of the experiment.

16. That the laboratory work should have the personal supervision of the teacher at the laboratory desk.

17. That the laboratory record should form part of the test for admission to college, and that the examination for admission should be both experimental and either oral or written.

18. That in the subjects dealt with by this Conference there be no separation of the examinations into preliminary and final.

19. It was further resolved that it is the opinion of this Conference that the admission to college by means of certificates from approved schools is the ideal method.

20. That in the opinion of this Conference it is better to study one subject as well as possible during the whole year than to study two or more superficially during the same time.

21. That in the instruction in Physics and Chemistry it should not be the aim of the student to make a so-called rediscovery of the laws of these sciences.

22. That a committee to consist of Mr. Fay and Mr. Krall have charge of making out a list of 50 experiments in Physics, and 100 experiments in Chemistry, to be subject to the approval of the Conference.

The above resolutions were carried unanimously, with one exception, and in this case with but one dissenting vote.

Each one of the resolutions was fully discussed and the discussions showed clearly that the members of the Conference were, in the main, in hearty accord. Every member evidently felt strongly that the ordinary method of secondary education that ignores the study of nature is highly objectionable. The study of books is well enough and undoubtedly important, but the study of things and of phenomena by direct contact must not be neglected. If it is conceded that the study of scientific methods is important, then it appears evident that in the early stages of education the mind should be prepared for this kind of study, and not rendered unfit for it. Therefore the Conference passed the first resolution.

But it would be impossible at present to provide a sufficient number of properly qualified teachers for elementary work in science, and for a time, at least, it would be necessary to instruct the teachers. To this end, Resolution 2 provides for the appointment of special science superintendents, who should have supervision over the elementary work in science, somewhat as the superintendents of drawing have over their branch of work.

As regards Resolutions 3, 4, and 5, it should be said that the order recommended for the study of Chemistry and Physics is plainly not the logical one, but all the members with one exception voted for Resolution 3 because they felt that the pupils should have as much mathematical knowledge as possible to enable them to deal satisfactorily with Physics, while they could profitably take up elementary Chemistry at an earlier stage.

Resolution 13 is an important one. It requires no argument to show that the study of a text-book of Chemistry or of Physics without laboratory work cannot give a satisfactory knowledge of these subjects, and cannot furnish scientific training. Such study is of little, if any, value. On the other hand, the mere performing of experiments in a laboratory, however well equipped the laboratory may be, cannot accomplish what is desired. Further, a pupil may work conscientiously in the laboratory, and study his text-book thoroughly, and yet receive a very inadequate training. He needs an intelligent teacher to aid him in interpreting the statements of the book and the phenomena observed, as well as to show him how to work. Loose work in the laboratory is as harmful as loose work in the class-room, and much of the laboratory work done in schools, as well as in colleges, is loose work. The great majority of pupils are sure to do bad work unless carefully guided. In mathematics and the languages accuracy can be secured, and is secured,

That President John M. Coulter should prepare an outline of work in botany to be recommended for high schools.

That Prof. O. S. Westcott should prepare an outline of work in zoölogy for high schools.

That Prof. Albert H. Tuttle should outline a course in physiology for primary and secondary schools.

That Prof. C. E. Bessey should report upon the best methods of teaching natural history throughout the schools, including recommendations for the use of instruments and note books.

That Prof. A. C. Boyden of Bridgewater Normal School should consider the form of examination to be adopted for admission to college.

The sub-reports of Messrs. Scott, Coulter, Westcott and Tuttle are appended. A subreport submitted by Prof. Bessey which covers the ground of that submitted by Prof. Scott is not given here. Prof. Boyden reports that the resolutions passed by the Conference cover adequately the subjects referred to him.

Respectfully submitted,

W. B. POWELL,
Chairman.

NATURE STUDY FOR GRADES OF SCHOOL BELOW THE HIGH SCHOOL.

General Principles and Plans.

Objects.

1. It must be remembered that the primary object of nature study is not that the children may get a knowledge of plants and animals. The first purpose of the work is to interest them in nature. This must be done before other desirable results can be obtained. The second purpose is to train and develop the children; *i. e.*, to train them to observe, compare, and express (see, reason, and tell); to cause them to form the habit of investigating carefully and of making clear, truthful statements, and to develop in them a taste for original investigation. The third purpose is the acquisition of knowledge. This, however, must be "gained by actual experience," and it must be "knowledge classified," or science.

For the attainment of these objects, interest, power, knowledge, *the children must study the plant;* no book should be used by them. The effort of the teacher should be so to interest and guide them, that they will learn how to work profitably.

Materials.

2. The children should study the plant as a whole, not merely a part, as seeds, leaves, flowers; it is a mistake to limit the work to one part to the exclusion of the others, and is as great a mistake to allow the children to study the parts without leading them to see the mutual relations and dependence of the parts.

3. The study should not be restricted to flowering plants, as trees and weeds, but should be extended as well to flowerless plants, such as ferns, horse-tails, mushrooms and toadstools, mosses, lichens, fungi, and fresh and salt-water algæ. Those children who carry the work through eight years should obtain a fair idea of the plant kingdom, including its principal divisions. Those who stop short of the eight years' work should have a general idea of the whole plant as a type of the plant kingdom, more or less detailed and generalized according to the amount of time spent in school.

Methods.

4. The plant should be studied as a living organism and not merely as a form or structure. The child should learn that each part has something to do, and he should discover that what it does, and the way in which it does it, determine its form and structure. The study of seeds, buds, or flowers should begin with growth and development or unfolding, which should lead to an investigation of use or function, and, finally, to an examination of structure. The comparison of the uses and structure of different plants results in classification.

The order of study is:

Life, growth, and development.
Use or function.
Structure.
Comparison.
Classification.

5. The plant should be studied in its relations to its environment,—light, air, water, soil, climate, and other plants,—and in its relations to the lower animals and to man. For the time being the plant is the centre of the world. The study furnishes many opportunities for coördinating science work with the other studies of the school, and at the same time for showing man's use of plants and his dependence on them.

6. As young children cannot generalize, it seems wise to limit the work during the first two years to the study of the germination, development, growth, and structure of three or four typical plants, like the bean, pea, and sunflower, studying, of course, only those features

that are easily understood. Gradually more details may be studied, and other kinds of plants, flowering and flowerless, examined, causing the pupils' ideas to be more and more complete and generalized.

7. Whatever is being studied, the questions to be answered are: What? Why? How?

First: What does it do, and what is it?

Second: Why does it do so, and why is it so?

Third: How does it do it, and how did it become so?

At first little can be done but answer the question "what"; gradually "what" includes so many particulars that an answer to "why" becomes possible; before the end of the course, "how" can and should be answered.

8. In the study, during the earlier years, of germination and of buds and flowers, that which appeals most to the children is the provision for the protection and care of certain parts; later the perfect order of nature will be seen, when the idea of system and plan may be developed. In time the highest function of the plant must be shown, that of reproduction, when the plant should be studied as an arrangement for producing seeds. While all these thoughts should be developed by slow degrees from the beginning, it seems wise to emphasize them in the order suggested. The central thoughts should be:

For the first and second years, care and protection.

For the third, fourth, and fifth years, order and system.

For the sixth, seventh, and eighth years, reproduction.

Expression.

9. Observation becomes more critical if its results are expressed by the observer. For the younger children, motion, stitching, modeling, drawing and painting, are more "expressive" than speech. Speech, as the most universal method of communicating ideas, should be emphasized in all but the earliest years of the course. A drawing gives better ideas of form and of relations of parts than can be given by verbal description. It will be found that often the simplest and quickest way for pupils to get clear, sharp ideas about the objects they are studying is to have them draw the objects.

Coördination with other Studies.

10. Nature study will not succeed unless it is coördinated with other studies. It should not be pushed into the course as an extra, but should be made the basis of much of the other work of the school. Experience has shown that when it is used as a basis for the early training in language and drawing, an interest in these studies is

easily secured and sustained. It is more pleasing to pupils to express ideas, resulting from their own observations, than to copy the expressions of others, or to put into somewhat different form expression obtained from teacher or book. The study of nature is a necessary preparation for a full understanding of much beautiful and valuable literature. Opportunities for connecting such work with geography are almost numberless. By means of this work, even arithmetic may have reality, and thus new life, infused into it.

Time of Year for Studying.

11. It seems wise that the study of plants should begin in early spring time, from February to April, and that it should be particularly emphasized then, though not restricted to that season of the year. Much can be done in the fall and even in mid-winter. The Conference has urged that the study of plants be continued throughout the year, at least twice a week.

Course of Work.

Central thought: Care and protection.

Seeds and Germination.

Let the children:

1. Plant beans and watch their growth.
2. When the seedlings are two or three inches high, study the seed in its parts.
3. Study the pea in a corresponding way, and then compare it with the bean, noting first the differences and then the resemblances.
4. Study seed and plant, in each case, in relation to their surroundings, air, water, and sunlight. (Children should be led to discover the uses of the different parts, first to the plant and then to animals and man.)
5. Continue the observations on the bean and the pea during the remaining part of the school year, noting the development, use, and general structure of buds, stems, roots, leaves, and, if possible, of flowers and fruit.

Buds.

The study of buds should be carried on in connection with the work in germination suggested above.

Let the children:

1. Gather branches having large buds, such as the horse-chestnut, the elder, or the lilac; put them in water; watch them, and tell about their development and the gradual unfolding of their parts.

2. Study the stem and its parts, wood, bark, and pith, their uses and structure.

3. Later, study fresh buds and compare them with those which have unfolded.

4. Compare the first bud studied with some other large bud.

Reproduction and Flowers.

In connection with the study of buds, call the attention of the children to the catkins of the willow, the poplar, and the hazel, and then to the flowers of the elder, the lilac, and, if possible, of the bean and pea.

Let the children:

1. Find dust-bearing (staminate) and seed-bearing (pistillate) flowers and parts of flowers. (This will give opportunity to develop the idea that flowers are for the production and protection of seeds.)

2. Study the dissemination of seeds that fly, as those of the dandelion and the milkweed; seeds that sail, as those of the maple and the basswood; seeds that stick, as those of the burdock and the tick; seeds that fall, as those of the bean and the pea.

3. Study fruits. (They should learn the use of fruit to the plant and to man.)

As early as may seem wise the teacher should develop, largely by stories and supplementary reading, the use of the other parts of the plant to the flowers and seeds.

Results of Two Years' Work.

At the close of the second year the children should have a fair idea of the plant as a whole, knowing something of all its parts, of their uses and relations, and particularly of the ways in which the plant and its parts are cared for and protected.

THIRD AND FOURTH YEARS.

Central thought: Care and protection leading to order and system, and plan.

Seeds and Germination.

Let the children:

1. Study the bean, the pea, the sunflower, and the pumpkin, as before, but more in detail, discovering something of the order or plan of growth, and searching for answers to the questions "why" and

"plants before studied, and examine other

3. Discover where the seeds are formed, how they escape from the ovary, and how they are disseminated.

4. Compare the development and structure of the seeds suggested above with those of the morning glory and the four-o'clock, and learn the classification into albuminous and exalbuminous seeds.

Buds.

Let the pupils:

1. Study the same buds as before, but more in detail, to discover the order shown in the buds and their parts.

2. Compare these with several other buds, including some of the small ones, for the purpose of noticing their positions and arrangement, as well as their protection.

3. Study, as an introduction to leaves, the arrangement and folding of leaves in the buds, and watch their unfolding, still noting the order and plan.

4. Study and watch in a similar way the development of flower buds.

Leaves.

Let the children:

1. Watch the unfolding of the leaves in the bud and notice their protection and arrangement as suggested before.

2. Note the uses of leaves and their parts, stipules, stalk, and blade, and of veins, epidermis, breathing pores, and pulp. (In connection with the uses of veins they should study venation.)

3. Study the positions, arrangement, and parts of leaves with reference to their uses; their relation to sunlight, air, rain, and the directing of water to the roots.

4. Study the positions of leaves with reference to buds, and note the order and plan shown in bud and leaf.

By means of charts or blackboard outlines, to which pupils may constantly refer, they should be familiarized with the more common forms of the leaf as a whole, and of base, apex, and margin, and should be trained to give orderly, exact, concise descriptions.

Reproduction and Flowers.

Develop by the study of the flowers themselves the fact that there are two kinds of flowers, those with seed boxes (pistillate) and those with boxes containing a powder (staminate). By the study of the willow, maple, and early meadow-rue, develop the fact that these two kinds of boxes may be, and usually are found, in the same flower.

Let the children:

1. Discover that both seed boxes (ovaries) and pollen boxes (anthers) are found in all kinds of flowering plants. (Both, then, must be very important.)

2. Study the stem and its parts, wood, bark, and pith, their uses and structure.

3. Later, study fresh buds and compare them with those which have unfolded.

4. Compare the first bud studied with some other large bud.

Reproduction and Flowers.

In connection with the study of buds, call the attention of the children to the catkins of the willow, the poplar, and the hazel, and then to the flowers of the elder, the lilac, and, if possible, of the bean and pea.

Let the children:

1. Find dust-bearing (staminate) and seed-bearing (pistillate) flowers and parts of flowers. (This will give opportunity to develop the idea that flowers are for the production and protection of seeds.)

2. Study the dissemination of seeds that fly, as those of the dandelion and the milkweed; seeds that sail, as those of the maple and the basswood; seeds that stick, as those of the burdock and the tick; seeds that fall, as those of the bean and the pea.

3. Study fruits. (They should learn the use of fruit to the plant and to man.)

As early as may seem wise the teacher should develop, largely by stories and supplementary reading, the use of the other parts of the plant to the flowers and seeds.

Results of Two Years' Work.

At the close of the second year the children should have a fair idea of the plant as a whole, knowing something of all its parts, of their uses and relations, and particularly of the ways in which the plant and its parts are cared for and protected.

THIRD AND FOURTH YEARS.

Central thought: Care and protection leading to order and system, and plan.

Seeds and Germination.

Let the children:

1. Study the bean, the pea, the sunflower, and the pumpkin, as before, but more in detail, discovering something of the order or plan of growth, and searching for answers to the questions "why" and "how."

2. Study, more in detail, plants before studied, and examine other *plants to* learn the uses of the different parts of the seedling and the *relation of the plant to its* surroundings.

3. Discover where the seeds are formed, how they escape from the ovary, and how they are disseminated.

4. Compare the development and structure of the seeds suggested above with those of the morning glory and the four-o'clock, and learn the classification into albuminous and exalbuminous seeds.

Buds.

Let the pupils:

1. Study the same buds as before, but more in detail, to discover the order shown in the buds and their parts.

2. Compare these with several other buds, including some of the small ones, for the purpose of noticing their positions and arrangement, as well as their protection.

3. Study, as an introduction to leaves, the arrangement and folding of leaves in the buds, and watch their unfolding, still noting the order and plan.

4. Study and watch in a similar way the development of flower buds.

Leaves.

Let the children:

1. Watch the unfolding of the leaves in the bud and notice their protection and arrangement as suggested before.

2. Note the uses of leaves and their parts, stipules, stalk, and blade, and of veins, epidermis, breathing pores, and pulp. (In connection with the uses of veins they should study venation.)

3. Study the positions, arrangement, and parts of leaves with reference to their uses; their relation to sunlight, air, rain, and the directing of water to the roots.

4. Study the positions of leaves with reference to buds, and note the order and plan shown in bud and leaf.

By means of charts or blackboard outlines, to which pupils may constantly refer, they should be familiarized with the more common forms of the leaf as a whole, and of base, apex, and margin, and should be trained to give orderly, exact, concise descriptions.

Reproduction and Flowers.

Develop by the study of the flowers themselves the fact that there are two kinds of flowers, those with seed boxes (pistillate) and those with boxes containing a powder (staminate). By the study of the willow, maple, and early meadow-rue, develop the fact that these two kinds of boxes may be, and usually are found, in the same flower.

Let the children:

1. Discover that both seed boxes (ovaries) and pollen boxes (anthers) are found in all kinds of flowering plants. (Both, then, must be very *important.*)

2. Study the stem and its parts, wood, bark, and pith, their uses and structure.

3. Later, study fresh buds and compare them with those which have unfolded.

4. Compare the first bud studied with some other large bud.

Reproduction and Flowers.

In connection with the study of buds, call the attention of the children to the catkins of the willow, the poplar, and the hazel, and then to the flowers of the elder, the lilac, and, if possible, of the bean and pea.

Let the children:

1. Find dust-bearing (staminate) and seed-bearing (pistillate) flowers and parts of flowers. (This will give opportunity to develop the idea that flowers are for the production and protection of seeds.)

2. Study the dissemination of seeds that fly, as those of the dandelion and the milkweed; seeds that sail, as those of the maple and the basswood; seeds that stick, as those of the burdock and the tick; seeds that fall, as those of the bean and the pea.

3. Study fruits. (They should learn the use of fruit to the plant and to man.)

As early as may seem wise the teacher should develop, largely by stories and supplementary reading, the use of the other parts of the plant to the flowers and seeds.

Results of Two Years' Work.

At the close of the second year the children should have a fair idea of the plant as a whole, knowing something of all its parts, of their uses and relations, and particularly of the ways in which the plant and its parts are cared for and protected.

THIRD AND FOURTH YEARS.

Central thought: Care and protection leading to order and system, and plan.

Seeds and Germination.

Let the children:

1. Study the bean, the pea, the sunflower, and the pumpkin, as before, but more in detail, discovering something of the order or plan of growth, and searching for answers to the questions "why" and "how."

2. Study, more in detail, plants before studied, and examine other *plants to* learn the uses of the different parts of the seedling and the *relation of the plant to* its surroundings.

3. Discover where the seeds are formed, how they escape from the ovary, and how they are disseminated.

4. Compare the development and structure of the seeds suggested above with those of the morning glory and the four-o'clock, and learn the classification into albuminous and exalbuminous seeds.

Buds.

Let the pupils:

1. Study the same buds as before, but more in detail, to discover the order shown in the buds and their parts.

2. Compare these with several other buds, including some of the small ones, for the purpose of noticing their positions and arrangement, as well as their protection.

3. Study, as an introduction to leaves, the arrangement and folding of leaves in the buds, and watch their unfolding, still noting the order and plan.

4. Study and watch in a similar way the development of flower buds.

Leaves.

Let the children:

1. Watch the unfolding of the leaves in the bud and notice their protection and arrangement as suggested before.

2. Note the uses of leaves and their parts, stipules, stalk, and blade, and of veins, epidermis, breathing pores, and pulp. (In connection with the uses of veins they should study venation.)

3. Study the positions, arrangement, and parts of leaves with reference to their uses; their relation to sunlight, air, rain, and the directing of water to the roots.

4. Study the positions of leaves with reference to buds, and note the order and plan shown in bud and leaf.

By means of charts or blackboard outlines, to which pupils may constantly refer, they should be familiarized with the more common forms of the leaf as a whole, and of base, apex, and margin, and should be trained to give orderly, exact, concise descriptions.

Reproduction and Flowers.

Develop by the study of the flowers themselves the fact that there are two kinds of flowers, those with seed boxes (pistillate) and those with boxes containing a powder (staminate). By the study of the willow, maple, and early meadow-rue, develop the fact that these two kinds of boxes may be, and usually are found, in the same flower.

Let the children:

1. Discover that both seed boxes (ovaries) and pollen boxes (anthers) are found in all kinds of flowering plants. (Both, then, must be very *important.)*

2. Note how well they are protected in bud and flower. (The floral envelope can be studied simply, at this stage, as a protection for stamens and pistils.)

3. Now study the use of the pollen and its function in the formation of seeds.

4. Note the order and plan of the flower and of its parts.

5. Learn now the fact that the main work of the plant is to produce seeds, and that root, stem, and leaf coöperate in this work.

Result of Four Years' Work.

At the close of the fourth year the pupils should be thinking about the "why" and the "how" of the world around them; they should have some knowledge of the order and system which prevails in nature, and should begin to comprehend something of the plan of common plants, of their reproduction and growth, and of the general uses and the gross structure of their parts.

FIFTH AND SIXTH YEARS.

Central thought: System, plan, and purpose.

The plant as an organism for producing seeds or new plants.

Seeds and Germination.

Let pupils:

1. Review at least two exalbuminous and two albuminous seeds.

2. Plant corn, watch its development, and then study the seed and its parts, and afterwards study the pine seed in a corresponding way.

3. Review classification into exalbuminous and albuminous seeds for the purpose of classification into monocotyledons, dicotyledons, and polycotyledons, and learn that cotyledons are modified leaves.

4. Study the practical uses to man of the albumen stored in the seed.

Buds.

Let the children:

1. Review as much as may seem necessary.

2. Study buds with respect to their positions and arrangement.

3. Examine the rings left by the falling of the bud-scales, and learn the story the rings tell.

4. Examine the buds of underground stems and the characteristics of stems as distinguished from roots.

5. Study the relations of positions, arrangement and development of buds to the shape or character of trees. Learn by a study of the trees themselves, the causes of the development and non-development of buds.

Roots.

1. Study roots and root hairs and their uses to the plant, and the positions and kinds of roots, as well as their various uses to the plant and to man.

2. Examine the stem or a branch of an ordinary tree. Study the arrangement and character of its different parts, and their uses to the plant and to man; learn how such plants grow; compare these with a corn stalk; learn how this stalk grows; learn the classification of stems into exogenous and endogenous.

3. Study the relation of the structure of the stem to its method of growth; of the number of cotyledons to the character and venation of the leaves, and the plan of the flower.

Leaves.

Let the children:

1. Continue the study of function and arrangement, as suggested for third and fourth years.

2. Study the leaves as arrangements for directing water to the roots, and try to discover the relation between the arrangement of branches and that of the leaves; between the length of the leaf-stalk and the shape of the leaves.

3. Continue the examination of the forms of leaves. Study and describe compound leaves.

4. Study the changes of color and the falling of leaves, particularly in the autumn, and their causes.

Reproduction, Flowers and Seeds.

Let the children:

1. Review as much as may seem necessary.

2. Discover how the pollen escapes from the anther. Study dehiscence of anthers.

3. Discover how the pollen gets from anther to pistil. Study methods of and arrangements for fertilization; the relations of flowers and insects, and the use to the plant of color and odors.

4. Discover how the pollen gets into the ovary.

5. Study the flower as a whole, as an arrangement for producing, protecting, and disseminating seeds.

6. Study the provisions of nature for matured seeds. (Much of this can be done in the earlier years of the course; it should be emphasized now.)

Lead the children to discover:

1. How the seeds separate, often with the surrounding parts, from the plant.

2. How they are disseminated.

3. How they escape from the ovary.
   a. By being enclosed in fleshy, edible parts.
   b. By having leaflike attachments, or wings, or hairy appendages.
   c. By bearing prickles, spines, hooks, etc.
   d. By being so light as to be carried by the wind.
   e. By having springs or elaters.
4. How seeds are protected through the winter.
5. How the embryo gets out of the enclosing coats.
6. What provision is made for the little plant after it begins to develop.

Let them:

7. Study leaves, roots, and stems in their relations to the flower, as organs for taking in, conveying, assimilating, and storing up nourishment for the formation of flowers and seeds.

8. Study ferns, mosses, liverworts, and horse-tails, and compare them with the plants before studied. Examine those as well as mushrooms, puff-balls, lichens, and fungi for spore cases and spores, and discover the fact that all are plants, and that all produce what correspond to seeds.

Result of Six Years' Work.

Pupils are self-reliant and independent; they can observe, reason, and express; and they have a fair knowledge of the whole plant and its life history.

SEVENTH AND EIGHTH YEARS.

Germination.

Lead pupils to note the germination of spores of mould; and study as carefully as possible the spore cases and spores of puff-balls, mushrooms, moulds, and other fungi, liverworts, mosses, ferns, horse-tails, lichens, lycopeds, stoneworts, and fresh and salt-water algæ.

Roots, Stems, and Leaves.

Let pupils:

1. Study the forms and modifications of roots (including aerial roots) and stems (including underground stems), to learn their uses to the plant and to man.

2. Examine the forms of leaves (scales, cotyledons, prickles, tendrils, pitchers, etc.), to learn their uses to the plant and to man.

3. Study the movements of leaves, tendrils, and rootlets, and examine or read about climbing plants.

4. Study the parts and the plan of the flowerless plants suggested above, and compare them with the flowering plants that have been studied.

Reproduction, Flowers and Fruit.

Let pupils:

1. Review as much of the work of the previous years as may seem necessary.

2. Study flowers whose floral envelopes are more or less grown together and otherwise modified, and learn classification into apetalous, polypetalous, and gamopetalous.

3. Examine the clustered flowers, gradually leading to the study of compositæ.

4. Become familiar with the characters of several of our common, sharply-defined families of flowering plants.

5. Study the flowers of the cone-bearing trees, and learn the classification into angiosperms and gymnosperms.

6. Restudy the flowerless plants suggested above, and learn the classification into phenogams and cryptogams, and study the characteristics of the principal divisions of cryptogamous plants.

7. Investigate the movements of flowers and their parts.

BOTANY FOR COMMON SCHOOLS.

Laboratory work should be the chief feature of the year's course in botany recommended for secondary schools. No books should be put into the hands of the pupil, except such as are to be used as laboratory guides or as books of reference. Table-room, a good compound microscope magnifying from at least 50 to 300 diameters, and a few ordinary reagents in small quantities (including at least alcohol, potassic hydrate, glycerine, iodine and other staining fluids), should be furnished each pupil. The work should consist of the careful study of typical plants, each selected to represent a prominent group of plants or an important phase of plant development. This study of types should not become a study of isolated and hence barren facts. Frequent lectures or talks will be found valuable for broadening the outlook of pupils and for leading them to see the true significance of the work they are doing, while frequent examinations of work and of pupils will be indispensable. Experience has shown that a good allotment of the five weekly periods allowed for this work will be made by giving three of them to laboratory work, one to lecturing and one to quizzing.

The study of a plant should consist of an examination of all its essential features; such as its cell structure; its mode of develop-

ment; its mode of reproduction; in short, as much of its life-history as is possible. Careful examination of specimens is secured best by careful sketching. Too much importance cannot be given to drawing, as it is not only an excellent device for securing close observation, but it is also a rapid method of making valuable notes. A very few verbal descriptions may accompany the sketches to make their meanings clear. These sketches and notes should be made in a permanent note-book, for future use.

Below is suggested a list of plants that will be serviceable in this proposed general survey of the plant kingdom. It must be remembered that many other plants will do as well as those named; for this reason the specimens to be studied in the various groups must be determined by the teacher, according to location or other conditions. All the principal groups of plants are well represented in the flora of any region, with the exception of the red and brown sea-weeds. These groups, however, should not be neglected. By forethought sea-weeds may be easily provided. Plants may be preserved in weak alcohol (35 to 50 %); dried specimens can be kept indefinitely and soaked when wanted for use.

It is much more satisfactory and scientific to begin with the study of the simplest forms than with complex forms, not only because they are more easily understood, but also because this order of study will give the learner some idea of the evolution of the plant kingdom from simple to complex forms. It is believed that the numerous advantages offered by this order of study, advantages which have been proved by much experience, outweigh the supposed advantages offered by beginning with the study of more complex forms.

Course of Work.

1. The simplest forms can be represented by the green-slimes, such as species of *Chroöcoccus* and *Oscillaria*, both to be found usually about springs and in shallow water. These could well be supplemented by Nostoc and other forms. It is not advisable to attempt any study of bacteria, yet they could be easily demonstrated at this point and their importance indicated.

2. The green algæ should be studied by means of such forms as *Protococcus*, *Cladophora*, *Œdogonium*, *Spirogyra*, *Desmids*, and *Vaucheria*. The doubtful but very interesting and common *Diatoms* might also be studied in this connection. It would be a very remarkable region in which all these forms could not be found abundant, since they constitute the most common green growths in water and damp places.

3. The brown algæ are well represented by the common *Fucus* or

"rock-weed," and the "kelps" (*Laminaria*, etc.) which can be obtained in abundance from the sea-shore.

4. The red algæ, also to be obtained from the sea-shore, can be studied in such common forms as *Callithamnion*, *Polysiphonia*, *Chondrus*, *Corallina*, or *Grinnellia*, etc.

5. *The fungi* should be represented by such plants as *Mucor*, *Cystopus*, some common powdery mildew (such as that found on lilac leaves), a cup fungus, a lichen, some rust (such as wheat-rust), a puff-ball and a toadstool.

6. Now the stone-worts (*Chara or Nitella*) should be studied if material is convenient.

7. The *Bryophytes* would be fairly represented by the study of a single liverwort and a moss.

8. The *Pteridophytes* could be studied in some ordinary fern; any greenhouse will furnish a supply of fern prothalli. If possible, the view of the group should be enlarged by the examination of an Equisetum or club-moss.

9. The *Gymnosperms* are well represented by the common *Pinus-sylvestris*.

10. The *Phanerogams* should be represented by a monocotyledon (such as *Trillium* or *Erythronium*), and a dicotyledon (such as *Capsella*).

Such a list of forms will give the student a very intelligent idea of the plant kingdom. It is possible, in one year, to study thoroughly as many types as are here enumerated; thorough work, however, should be done even though the number of specimens examined should be reduced. It will undoubtedly be claimed that many of these forms are entirely unfamiliar to teachers. It can only be said in reply, that under such circumstances the teaching of any forms could hardly be profitable, and that study for a single season at any one of the numerous summer schools where botany is taught will enable such teachers not only to understand these forms, but also to collect materials with which to teach them, as well as to know how properly to direct their use.

As it is desirable that the year of work should be *continuous*, we recommend that it begin in September and continue uninterruptedly throughout the school year. Nearly all the plants suggested, or others that may be chosen, can be found in the autumn and early winter in sufficient numbers and in good condition for study. Many of these may be properly preserved for use, while a common greenhouse, or a tank, or a few jars of water, will yield a full supply of others needed during the winter months.

ZOÖLOGY FOR SECONDARY SCHOOLS.

Several considerations have influenced the arrangement of the following scheme of work in zoölogy for secondary schools.

1. It is unfortunately true that many students at secondary schools will have had no instruction, or but desultory instruction, in any department of Natural History. In devising a plan of work for the secondary schools, such students must not be overlooked.

2. It is incontestable that neither an elaborate scheme of classification, nor the very fine points that enter into a discussion of the possible beginnings of things are easily comprehended by untrained minds. Hence, both ultimate classfication and primordial things must, at first, be left out of consideration.

3. Success in teaching is sometimes jeopardized by the early presentation of disagreeable features of the subject taught. It is desirable to postpone the consideration of these, if it can be done without essential loss, until the interest of the student has been so secured as to induce him to face the disagreeable for the sake of probable though distant advantage. Hence everything like dissection should be postponed until the eager curiosity of the tyro overcomes a possible nervous timidity incident to anatomical investigation.

4. In some sections of our country it is difficult to obtain materials which are wastefully common in other sections. It is believed, however, that, by the exercise of a little forethought and diligence on the part of the instructor, the materials here suggested can be obtained at slight expense in any part of the United States.

5. The contemplated work in zoölogy is intended to occupy the student's time five hours per week for one year of forty weeks. These two hundred hours work are to be employed, one hundred twenty in laboratory research, and eighty in reports on laboratory and text-book work.

The work may begin with a living fish for study. The ordinary carp (gold fish) will answer an admirable purpose. The fish should be studied in its entirety as a living organism; its mode of locomotion, its body-covering and all other visible parts, thoroughly familiarized. Subsequently, the pupils should be provided with other fishes. As large a variety of fishes as possible should be studied for comparison. Perch are usually obtainable, as are also smelts in their season, and other common varieties of fishes, whether the school be located inland or on the seaboard.

Some general ideas of classification may be here introduced, but minutiae which are likely to produce weariness and consequent

distaste should be avoided. Close anatomical investigation may well be left for future study. Concerning this the shrewd teacher will determine for himself. He will not lay down rules from which no circumstance may swerve him, but rather will be guided in some respects by the abilities of his class, irrespective of what has been done by previous classes. As this elementary work with fishes will furnish materials for subsequent constant reference it should not be hurried.

The microscope may well be employed in calling attention to the structure of the scales. No better subject will ever be found for exciting interest among young naturalists than these scales offer as exhibited by polarized light. Two or three weeks or more, of time here occupied will yield abundant fruitage in future study. Proper supervision of notes and drawings made by the pupils will lead them to appreciate and acquire the true method of making valuable descriptions, regarding and recording the essential while disregarding the non-essential.

It is believed that by means of the work suggested above there will be aroused in the pupils an interest which will render them enthusiastic in pursuing a course of lessons like the following. The preferences of the teacher, as well as the conditions offered by locality, will be factors in determining the individual species to be used for study and illustration. The text-book, which should be a brief one, should be supplemented by books of reference to be consulted when special organisms or other topics are under discussion.

Course of Work.

The Protozoa.

The study of these animals may well begin with the Amoeba. Specimens which by proper forethought may easily be secured should be before the class. All the conditions that enter into a full determination of the position of the Amoeba as belonging to the animal kingdom need not be sought by the class. Reference to the fish already made a subject of special study will aid greatly in determining some of the conditions that should be learned. Life, sensation, voluntary motion, use of oxygen, use of organic food, protoplasm are naturally some of the facts that must be seen and understood. The question of calcareous *vs.* siliceous frame-work will naturally be postponed. Following a discussion of the Amoeba, some rhizopod, as ***Actinophrys***, which is sufficiently common, may well receive a little attention. Of the Infusoria, *Stentor*, *Vorticella*, *Paramoecium* which are always obtainable will excite great enthusiasm in pupils.

The Porifera.

Spongilla is accessible in almost every locality, while on the sea-coast marine sponges may be obtained.

The Coelenterata.

Hydroids may be procured on the sea-coast and kept dry in mass. Preserved in alcohol they make excellent class specimens. Specimens mounted on slides for the microscope will aid in giving pupils definite ideas of the appearance of the animals when alive. When possible, living specimens should be provided. The fresh-water hydra should not be overlooked; the work, at least, of polyps is always obtainable.

The Echinodermata.

A supply of starfishes, sea-urchins and crinoids is indispensable. The mode of growth of crinoids as indicated by fossil remains may be, in a certain sense, paralleled by the hydroids and *Vorticellae* already somewhat familiar.

The Vermes.

The earth worm furnishes cheap and abundant material for study. With a good microscope in use it will not be surprising if representatives of the *Gregarinidae* are discovered by the inquisitive student. The teacher may thus have an excellent opportunity to impress on the minds of the pupils the fact that school work is at best but a beginning, and that abundant opportunities are offered for further discovery.

The Mollusca.

The clam, whether marine or other, will here serve an excellent purpose. Univalves should receive a share of attention. Some ideas of classification may be developed in this branch with satisfactory results from the conchological side, even with malacology temporarily disregarded. The development of gasteropods, being a subject of absorbing interest, may well occupy a small share of attention.

The Arthropods.

Lobsters, edible crabs and crayfish, which are all easily obtained, may be dissected with little repugnance on the part of learners. For the study of minute crustacea, *Cyclops* and *Daphnia* are available everywhere. On a larger scale shrimps or sand fleas are abundant, and on the coast the different stages of growth of the common crab and living barnacles furnish abundant materials for study.

Insects.

A special and, so far as possible, thorough study of some common species of grass-hopper will prepare the pupils for the further investigation of Insects. The Cuverian rather than the modern and more accurate classification of insects will be found of great practical value. Representatives of the Diptera, the Neuroptera, the Coleoptera, the Hemiptera, the Lepidoptera, and the Hymenoptera may be made subjects of special study, possibly in the order named. The pupils themselves will easily arrange a crude classification of insects as follows:—

1. **Mandibulata** { Coleoptera, Hymenoptera, Orthoptera, Neuroptera,
2. **Haustellata** { Lepidoptera, Heteroptera, Homoptera, Diptera.

The Vertebrata.

1. *Fish.* In schools away from the coast the characteristic features of sharks and rays may well be enforced by the use of alcoholic specimens. Fossil fishes or fragments of the same, as teeth and cales, will be found useful here. The presence of scales, the classification of fishes as homocercal or heterocercal, and the question of edibility may well be discussed together. As many types of fishes as can easily be obtained should be studied for purposes of classification. The local markets may be drawn upon very advantageously.

2. *Batrachians.* Special studies of toads and frogs and such salamanders as are procurable will be of advantage. *Nocturus* should be made a subject of special investigation.

3. *Reptiles.* Lizards, snakes and turtles need attention. By this time a comparative examination of the circulatory apparatus of the classes of vertebrates will furnish opportunity for much study. The terms, *cold-blooded* and *warm-blooded* begin to have definite significance now, while the different types of heart suggest reasons for, or concomitants of, many other conditions of life, that have been noticed.

4. *Birds.* The comparison of vertebrate differences and resemblances should continue with the study of birds. The structure of the vertebræ themselves will demand considerable attention. The

close relationship of birds and reptiles despite their outward dissimilarity will at once suggest itself to the thoughtful observer.

5. *Mammals.* The teacher will be his own best judge as to the needs of his class in the broad field here before him. Physiological models, manikins, etc., subserve an excellent purpose, if the dissection of some mammal, as a rabbit or a cat, cannot conveniently be accomplished. The work can thus be made to furnish valuable human anatomical information if not to culminate in the study of human anatomy.

Ideas, before somewhat crude, in what has been called physiology, may now be crystallized into permanent and available shape.

It must not be forgotten that the plan here outlined is only suggestive. It is perhaps hardly necessary to repeat that drawings and written descriptions should be constantly required. Close observation and accurate expression are mutually helpful.

Withal it should be constantly borne in mind that the acquisition of facts is not the most important desideratum. Discipline, intellectual growth, and broad and varied culture should be the aims to which the acquisition of special information will be properly subsidiary.

PHYSIOLOGY IN PRIMARY AND SECONDARY SCHOOLS.

"It is the judgment of this Conference that, while the principles of hygiene should be included in the work of the lower grades, the study of physiology as a science may best be pursued in the later years of the high-school course. We recommend that a daily period for one half year be devoted in the high school to the study of anatomy, physiology and hygiene, with as large an amount of practical work as is possible."

The recommendations of the report upon this portion of the work of the Conference are based upon the following considerations:

The study of physiology is in a great measure the study of the mechanics, the physics, and the chemistry of the living body; before it can be pursued profitably the student should have, at least, a fair elementary knowledge of these sciences as fundamental. It is not possible to teach it as a science to pupils devoid of such knowledge; any effort to do so is apt to lead either to the bewilderment of the learner, or else to attempts at "simplification" on the part of the instructor which convey erroneous ideas unless the teacher has exceptional knowledge and skill.

The study of physiology demands as a prerequisite a certain amount of anatomical knowledge, and much of what is called physiology in elementary text-books on that science consists of statements concerning the anatomy of the human body that are of more or less importance as a basis for physiological knowledge. It is, in the judgment of this Conference, not desirable to teach a great deal of anatomy to young children. Such instruction is likely to lead, in some instances at least, to morbid if not prurient curiosity that is productive of far more evil than the instruction is likely to counterbalance with good.

Considerations such as these lead to the conviction expressed in the resolution of the Conference concerning the teaching of physiology in the lower grades. It is their belief, however, that simple and practical instruction upon the subject of personal health and its care may with advantage be given to young children. Such instruction, however, should rather be given and received (as many other things concerning conduct must be received by young children) upon authority, than as an appeal to the judgment of the pupil as based on his physiological knowledge.

Instruction in hygiene adapted to the capacity of young children may be profitably given on the subjects of personal cleanliness; pure air, and the relation of the carriage of the body to healthy respiration; wholesome foods, and moderateness and regularity in their use; regular and sufficient sleep; regularity in other bodily habits; care as to temperature, and prudence concerning exposure; and abstinence from narcotics and stimulants, and from drugs generally.

Where instruction in physiology and hygiene is required in the primary grades by the law of the state, it may be preceded by a simple account of the structure of the body. It should include brief and elementary discussions of the principal groups of functions; and should lay greatest stress, as is the intent of the law in most cases, upon such simple precepts of hygiene as may be clearly understood and practiced by the child.

What has already been said concerning the study of physiology as a science, will, if accepted, justify the opinion expressed by the Conference that such study may best be pursued in the later years of the high-school course. It should follow rather than precede the portion of the course devoted to physics and chemistry, as well as such other biological study as the course provides for.

While physiology is one of the biological sciences, it should be clearly recognized that it is not, like botany or zoölogy, a science of observation and description; but rather, like physics or chemistry, a science of experiment. While the amount of experimental instruction (not involving vivi-section or experiment otherwise unsuitable)

that may with propriety be given in the high school is neither small nor unimportant, the limitations to such experimental teaching, both as to kind and as to amount, are plainly indicated. For this reason the study of physiology as a component of the high-school course should be regarded as of importance rather as an informational than as a disciplinary subject, and should be taught largely with reference to its practical relations to personal and public hygiene.

It should be preceded by a brief study of the general plan of the body. As each group of functions is taken up, the organs involved should be specially studied both as to their anatomy and their histology. Anatomical demonstrations should be made whenever possible upon fresh material from the bodies of domestic animals; where fresh material cannot be obtained, permanent alcoholic preparations properly dissected may be shown; models and engravings of the organs of the human body may, with advantage, be exhibited in connection with demonstrations of the same organs, from the bodies of the lower animals most available for comparison; but dependence should never be placed entirely on such artificial representation, if original specimens can be obtained. All anatomical teaching in this connection should keep clearly in view the physiological knowledge to which it is subservient; attention should be directed to the structural features of greatest importance in this respect; and facts of purely morphological significance should be disregarded, whenever attention to them would distract the mind of the pupil from the study of the relation of structure to function.

Demonstrations of the histological structure of the various organs of the body require the use of a good microscope, with powers to four or five hundred diameters. A set of thirty or forty permanent preparations may be provided, which will suffice to show all that is most important, but it will add greatly to the interest of the student and to the reality of the knowledge obtained, if the teacher is able to make a portion, at least, of such preparations in the presence of the class. If the possession of a number of microscopes renders it possible, it is very desirable that an opportunity be afforded students for making for themselves preparations of, at least, the simple structural elements that may be dissociated by teasing or other methods, as well as of sections and other complex preparations which the school equipment will permit. Such practical exercises in histology may properly accompany the anatomical dissections that students should be, as far as possible, encouraged to make for themselves.

The obvious limitations to experimental work in physiology in the high school, already referred to, make it necessary for the student to acquire much of the desired knowledge from the text-book only.

Nevertheless, much may be done by a thoughtful and ingenious teacher to make such knowledge real, by the aid of suitable practical exercises and demonstrations. Space will not permit a detailed statement in this report, of the various ways in which this may be accomplished, but a few typical instances may be cited, such as artificial salivary and peptic digestion; the study of arterial circulation, as illustrated by the movement of a rhythmically impelled fluid in elastic tubing toward a variable resistance; the working of a model of the respiratory mechanism, and the illustration of the optics of normal (and abnormal) vision, by means of a properly constructed schematic eye. As excellent examples of direct physiological experiment, at once practicable and valuable, may be mentioned the experimental study of the sensations and their illusions, notably the tactile and the visual.

The instruction in hygiene for the high-school course may, in addition to a fuller discussion of the subjects cited in a previous portion of this report, discuss matters advantageously which concern the adult, though beyond the control of the child; as examples, may be mentioned the subjects of dietetics; of heating and ventilating; of water supply and drainage. Such instruction should now include a consideration of the reasons which underlie the rules of hygiene, and the student should be encouraged and guided in efforts to make practical application, in this respect, of the knowledge which he has acquired by the study of physiology.

Finally, attention should be called to the fact that, while it is true of the sciences generally, it is eminently true of physiology, that it is vain to expect good results in the classroom unless the subject is taught by well-trained teachers. No person should be regarded as qualified to teach physiology in a high school, whose preparation has not been at least as thorough as that of his fellow-teachers in mathematics or the languages.

HISTORY, CIVIL GOVERNMENT, AND POLITICAL ECONOMY.

To the Committee of Ten:

President Charles W. Eliot, *Chairman:* —

Dear Sir, — Herewith we respectfully submit the resolutions reached by the Conference held at Madison, Wisconsin, Dec. 28–30, 1892, to consider the teaching of History, Civil Government, and Political Economy in the schools; together with an explanatory report. In an appendix will be found brief categorical answers to your specific questions.

I. Resolutions of the Conference.

Time to be occupied.

1. *Resolved*, That history and kindred subjects ought to be a substantial study in the schools in each of at least eight years. [*Report*, §§ 7–9, 16.]

Subjects.

2. *Resolved*, That American history be included in the program. [*Resolutions* 14, 16; *Report*, §§ 12–14, 16, 17.]

3. *Resolved*, That English history be included in the program. [*Resolutions* 14, 16; *Report*, §§ 12–14, 16, 17.]

4. *Resolved*, That Greek and Roman history, with their Oriental connections, be included in the program. [*Resolutions* 14, 16; *Report*, §§ 12–14, 16, 17.]

5. *Resolved*, That French history be included in the program. [*Resolution* 14; *Report*, §§ 12–14, 16.]

6. *Resolved*, That one year of the course be devoted to the intensive study of history. [*Resolution* 14; *Report*, §§ 15, 16.]

7. *Resolved*, That the year of intensive study be devoted to the careful study of some special period, as for example the struggle of France and England for North America, the Renaissance, etc. [*Report*, §§ 14–16, 33.]

8. *Resolved*, That a list of suitable topics for the special period be drawn up as a suggestion to teachers. [*Report*, §§ 14–16.]

9. *Resolved*, That formal instruction in political economy be omitted from the school program; but that economic subjects be treated in connection with other pertinent subjects. [*Resolution* 30; *Report*, § 19.]

10. *Resolved*, That to American history in the first group of studies be added the elements of civil government. [*Resolutions* 28, 29; *Report*, §§ 16, 18.]

Programs.

11. *Resolved*, That the eight-year course be consecutive. [*Resolution* 14; *Report*, §§ 10, 16.]

12. *Resolved*, That the first three years of study be devoted to mythology and biography based on general history and on American history. [*Resolution* 14; *Report*, §§ 16, 30.]

13. *Resolved*, That the point at which the program should be divided into two groups be fixed at the beginning of the high school course. [*Resolutions* 14, 16; *Report*, §§ 6, 10.]

14. *Resolved*, That the Conference adopt the following as the program for a proper historical course. [*Report*, §§ 10, 13, 14, 16.]

1st year. Biography and mythology.
2d year. Biography and mythology.
3d year. American history; and elements of civil government.
4th year. Greek and Roman history, with their Oriental connections.

[At this point the pupil would naturally enter the high school.]

5th year. French history. (To be so taught as to elucidate the general movement of mediaeval and modern history.)
6th year. English history. (To be so taught as to elucidate the general movement of mediaeval and modern history.)
7th year. American history.
8th year. A special period, studied in an intensive manner; and civil government.

15. *Resolved*, That the Conference frame an alternative six-year program. [*Report*, § 17.]

16. *Resolved*, That the following program be recommended for schools which are not able to adopt the longer program. [*Report*, § 17.]

1st year. Biography and mythology.
2d year. Biography and mythology.

[In the intervening year or years, if any, historical reading should be pursued as a part of language study.]

3d year. American history, and civil government.

[At this point the pupil would naturally enter the high school.]

4th year. Greek and Roman history, with their Oriental connections.

5th year. English history. (To be so taught as to elucidate the general movement of mediaeval and modern history.)

6th year. American history and civil government.

17. *Resolved*, That in no year of either course ought the time devoted to these subjects to be less than the equivalent of three forty-minute periods per week throughout the year. [*Report*, §§ 7–9.]

Methods in History.

18. *Resolved*, That it is desirable that in all schools history should be taught by teachers who not only have a fondness for historical study but who also have paid special attention to effective methods of imparting instruction. [*Report*, §§ 25, 26.]

19. *Resolved*, That in the first two years oral instruction in biography and mythology should be supplemented by the reading of simple biographies and mythological stories. [*Report*, §§ 16, 17, 30.]

20. *Resolved*, That after the first two years a suitable text-book or text-books should be used, but only as a basis of fact and sequence of events, to be supplemented by other methods. [*Report*, §§ 27–29.]

21. *Resolved*, That pupils should be required to read or learn one other account besides that of the text-book, on each lesson. [*Report*, §§ 27–29.]

22. *Resolved*, That the method of study by topics be strongly recommended, as tending to stimulate pupils and to encourage independence of judgment. [*Report*, § 33.]

23. *Resolved*, That the teaching of history should be intimately connected with the teaching of English: first, by using historical works or extracts for reading in schools; second, by the writing of English compositions on subjects drawn from the historical lessons; third, by committing to memory historical poems and other short pieces; fourth, by reading historical sketches, biographies and novels, outside of class work. [*Report*, §§ 30–34.]

24. *Resolved*, That, so far as practicable, pupils should be encouraged to avail themselves of their knowledge of ancient and modern languages, in their study of history. [*Report*, §§ 30, 32, 34.]

25. *Resolved*, That the study of history should be constantly associated with the study of topography and political geography, and should be supplemented by the study of historical and commercial geography, and the drawing of historical maps. [*Report*, § 35.]

26. *Resolved*, That in all practicable ways an effort should be made to teach the pupils in the later years to discriminate between authorities, and especially between original sources and secondary works. [*Report*, §§ 15, 33.]

3. Discover where the seeds are formed, how they escape from the ovary, and how they are disseminated.

4. Compare the development and structure of the seeds suggested above with those of the morning glory and the four-o'clock, and learn the classification into albuminous and exalbuminous seeds.

Buds.

Let the pupils:

1. Study the same buds as before, but more in detail, to discover the order shown in the buds and their parts.

2. Compare these with several other buds, including some of the small ones, for the purpose of noticing their positions and arrangement, as well as their protection.

3. Study, as an introduction to leaves, the arrangement and folding of leaves in the buds, and watch their unfolding, still noting the order and plan.

4. Study and watch in a similar way the development of flower buds.

Leaves.

Let the children:

1. Watch the unfolding of the leaves in the bud and notice their protection and arrangement as suggested before.

2. Note the uses of leaves and their parts, stipules, stalk, and blade, and of veins, epidermis, breathing pores, and pulp. (In connection with the uses of veins they should study venation.)

3. Study the positions, arrangement, and parts of leaves with reference to their uses; their relation to sunlight, air, rain, and the directing of water to the roots.

4. Study the positions of leaves with reference to buds, and note the order and plan shown in bud and leaf.

By means of charts or blackboard outlines, to which pupils may constantly refer, they should be familiarized with the more common forms of the leaf as a whole, and of base, apex, and margin, and should be trained to give orderly, exact, concise descriptions.

Reproduction and Flowers.

Develop by the study of the flowers themselves the fact that there are two kinds of flowers, those with seed boxes (pistillate) and those with boxes containing a powder (staminate). By the study of the willow, maple, and early meadow-rue, develop the fact that these two kinds of boxes may be, and usually are found, in the same flower.

Let the children:

1. Discover that both seed boxes (ovaries) and pollen boxes (anthers) are found in all kinds of flowering plants. (Both, then, must be very important.)

II. Preliminary.

1. Basis of the Discussion in the Conference.

By the politeness of the University of Wisconsin and of the citizens of Madison, your Conference was invited to hold its sessions in that city. The convenient rooms of the Seminary of Political Science were placed at our disposal, and the courtesy and hospitality of the people of the city did much to make our stay agreeable and to facilitate the work. We held two prolonged sessions on each of three days. At the first session steps were taken to prepare a program, and on the adjournment of the sixth session all the subjects of that program had been examined and our conclusions formulated in definite resolutions. It was our effort to examine the ground thoroughly, to find out what was being done by the schools on the subjects assigned, and to suggest an harmonious and comprehensive scheme of historical study.

Of the ten members one was a college president; one the principal of an academy including primary as well as secondary grades; two were high school principals; and six were college professors of history, civil government, or political economy. Several members had had experience in other grades of schools, as teachers, superintendents, or members of school governing boards. The Conference was further materially assisted by the advice of Professors Frederick J. Turner and Charles H. Haskins of the University of Wisconsin, and of Mr. Wells, State Superintendent of Education for Wisconsin. At least twelve states in the Union, extending from Maine to Virginia, and west as far as Iowa, were represented by men who had lived in them, and who knew something of their system of schools.

Without assuming to speak for the great body of teachers of history and kindred branches throughout the Union, we believe that we are acquainted with, and fully represent, the opinions of many thoughtful individuals in widely distributed parts of the country.

It may be further stated that upon each of the thirty-five resolutions which were framed, the Conference voted unanimously. This does not mean that, for the sake of harmony, members withdrew strongly-felt opposition to some of the resolutions; but that in each vote, as finally formulated, every member of the Conference heartily concurred.

Besides their natural desire to see the instruction in their favorite study improved, it is the mature conviction of the members of the Conference, as teachers, that the subjects in question, especially when

taught by the newer methods herein advocated, serve to broaden and cultivate the mind; that they counteract a narrow and provincial spirit; that they prepare the pupil in an eminent degree for enlightened and intellectual enjoyment in after years; and that they assist him to exercise a salutary influence upon the affairs of his country. Hence it is the especial desire of the Conference to see these advantages as widely diffused as possible.

2. Fundamental Questions.

Four fundamental questions confronted the members of the Conference upon assembling. They were: how far they should make recommendations which could be applied only in favored parts of the country; whether they should recommend an ideal program, or a simpler program practicable in good schools with their present means and apparatus; how far they should insist on a uniform program; and what relations they should suggest between the schools and the colleges.

On the first point we agreed that the recommendations should be the same for all. (§ 10.) Upon the second point, the recommendation of an ideal program, the Conference was unanimously of the opinion that it would suggest nothing that was not already being done by some good schools, and that might not reasonably be attained wherever there is an efficient system of graded schools. (§ 9.)

Upon the third question we especially trust that we may not be misunderstood. It would not be our purpose, if we had the power, to reduce the teaching of history to one uniform program carried out on a uniform method. We believe that the time devoted to history and allied subjects should be increased; that the subjects treated should not be confined to our own country; and that the dry and lifeless system of instruction by text-book should give way to a more rational kind of work; but our recommendations will have little effect unless they are carried out in an intelligent and discriminating spirit, which will alter the details according to local necessities and difficulties.

As to the fourth question, we believe that the colleges can take care of themselves; our interest is in the school children who have no expectation of going to college, the larger number of whom will not enter even a high school. This feeling is strengthened by the consideration that proportionally a much smaller number of the girls go to college than of the boys, and it is important that both sexes shall be well grounded on these subjects. An additional responsibility is thrown upon the American system of education by the great number of children of foreigners, children who must depend on the

II. Preliminary.

1. Basis of the Discussion in the Conference.

By the politeness of the University of Wisconsin and of the citizens of Madison, your Conference was invited to hold its sessions in that city. The convenient rooms of the Seminary of Political Science were placed at our disposal, and the courtesy and hospitality of the people of the city did much to make our stay agreeable and to facilitate the work. We held two prolonged sessions on each of three days. At the first session steps were taken to prepare a program, and on the adjournment of the sixth session all the subjects of that program had been examined and our conclusions formulated in definite resolutions. It was our effort to examine the ground thoroughly, to find out what was being done by the schools on the subjects assigned, and to suggest an harmonious and comprehensive scheme of historical study.

Of the ten members one was a college president; one the principal of an academy including primary as well as secondary grades; two were high school principals; and six were college professors of history, civil government, or political economy. Several members had had experience in other grades of schools, as teachers, superintendents, or members of school governing boards. The Conference was further materially assisted by the advice of Professors Frederick J. Turner and Charles H. Haskins of the University of Wisconsin, and of Mr. Wells, State Superintendent of Education for Wisconsin. At least twelve states in the Union, extending from Maine to Virginia, and west as far as Iowa, were represented by men who had lived in them, and who knew something of their system of schools.

Without assuming to speak for the great body of teachers of history and kindred branches throughout the Union, we believe that we are acquainted with, and fully represent, the opinions of many thoughtful individuals in widely distributed parts of the country.

It may be further stated that upon each of the thirty-five resolutions which were framed, the Conference voted unanimously. This does not mean that, for the sake of harmony, members withdrew strongly-felt opposition to some of the resolutions; but that in each vote, as finally formulated, every member of the Conference heartily concurred.

Besides their natural desire to see the instruction in their favorite study improved, it is the mature conviction of the members of the Conference, as teachers, that the subjects in question, especially when

taught by the newer methods herein advocated, serve to broaden and cultivate the mind; that they counteract a narrow and provincial spirit; that they prepare the pupil in an eminent degree for enlightened and intellectual enjoyment in after years; and that they assist him to exercise a salutary influence upon the affairs of his country. Hence it is the especial desire of the Conference to see these advantages as widely diffused as possible.

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schools for their notions of American institutions, or of anything outside their contracted circle. Hence our recommendations are in no way directed to building up the colleges, increasing the number of college students, or taking out of the hands of the colleges the historical work which they are especially fitted to do. (§§ 10, 11, 20–22.)

3. Usual Objects of Historical and kindred Studies.

At the outset a clear statement of the objects of historical training is necessary. The result which is popularly supposed to be gained from history, and which most teachers aim to reach, is the acquirement of a body of useful facts. In our judgment this is in itself the most difficult and the least important outcome of historical study. Facts of themselves are hard to learn, even when supported by artificial systems of memorizing, and the value of detached historical facts is small in proportion to the effort necessary to acquire and retain them. When the facts are chosen with as little discrimination as in many school text-books, when they are mere lists of lifeless dates, details of military movements, or unexplained genealogies, they are repellant. To know them is hardly better worth while than to remember, as a curious character in Ohio was able to do some years ago, what one has had for dinner every day for the last thirty years. It cannot be too strongly emphasized that facts in history are like digits in arithmetic; they are learned only as a means to an end.

4. Training of the Mind.

The principal end of all education is training. In this respect history has a value different from, but in no way inferior to, that of language, mathematics, and science. The mind is chiefly developed in three ways: by cultivating the powers of discriminating observation; by strengthening the logical faculty of following an argument from point to point; and by improving the process of comparison, that is, the judgment.

As studies in language and in the natural sciences are best adapted to cultivate the habits of observation; as mathematics are the traditional training of the reasoning faculties: so history and its allied branches are better adapted than any other studies to promote the invaluable mental power which we call the judgment. Hence statesmen have usually been careful students of history. History is a subject unequalled for its opportunities of comparison, for it is preeminently a study of the relation between cause and effect. History combines the advantages of a philosophical and a scientific subject: upon the one side, it is a study of the human mind, of character, and

motives; upon the other hand, historical records form a body of material which, in the demand its analysis makes upon the mind, may be compared with that of chemistry or geology. Indeed it has some practical advantages over science; for the examples in a geological or mineralogical museum fill many shelves, while in history they may be brought within the covers of a few books. The value of history is increased if it is looked upon in part as a laboratory science, in which pupils learn to assemble material and from it to make generalizations. (§§ 31–33.)

"Since grappling with history is grappling with life," says an able teacher, "the main aim in teaching history is to develop those powers in the pupil which will best serve him in life." In almost every other subject taught in the grammar schools the basis of knowledge is fixed; the child meets axioms in mathematics, and takes in his reading and geography without reasoning upon them; history properly taught offers the first opportunity for a growth of discriminative judgment; it should train the pupil to throw away the unimportant or unessential, and to select the paramount and cogent. It may be so taught, also, as to lead him in some degree to compare and weigh evidence; that is, through history a child should be taught to exercise those qualities of common-sense comparison, and plain, everyday judgment which he needs for the conduct of his own life. Historical material is as abundant and familiar as geological; books, or at least newspapers, are to be found in every home; and the methods of historical criticism may be applied constantly to the news or gossip of the household.

5. Other Advantages.

History has long been commended as a part of the education of a good citizen. Locke said: "History is the great mistress of prudence and national knowledge." Milton said that children ought all to know the beginning, the end, and reasons of political societies. "History," says Bacon, "supplies examples." "History," says an English writer, "furnishes the best training in patriotism, and it enlarges the sympathies and interests." This is particularly the case with the history of one's own country, and America needs the training because we Americans know that our country is great, better than we know why it is great.

A significant advantage of history is that, intelligently taught, it may be a medium for the literary expression of the pupils (§ 32). Where but in a school in which history is well considered, could one hear a child sum up her judgment of the character of the English race in so cogent a phrase as this: "The English have such a sticking quality"? History is the source of a great number of con-

ventional metaphors and allusions. Every intelligent child knows what is meant by crossing the Rubicon, by meeting a Waterloo, by ringing out like a liberty bell. History abounds in literary material.

Another very important object of historical teaching is moral training. History is the study of human character. "Perhaps the most valuable part of our work" says a teacher, "is that we are all made — teacher as well as pupil — to learn personal lessons from history, to watch the course of humanity as we would that of an individual, to shun its errors, and make use of its excellencies"; and it is a study in which the mistakes and failures of national life, like those of private life, become suggestive warnings.

To sum up, one object of historical study is the acquirement of useful facts; but the chief object is the training of the judgment, in selecting the grounds of an opinion, in accumulating materials for an opinion, in putting things together, in generalizing upon facts, in estimating character, in applying the lessons of history to current events, and in accustoming children to state their conclusions in their own words.

III. Arrangement of Studies.

6. Time to begin historical and kindred Studies.

With these general objects in view, your Conference has attempted to settle how much time may reasonably be devoted to the subjects which it has been asked to discuss. First of all comes the preliminary question, at what time may children profitably begin to study history? Upon this subject there seems to be a general concurrence of opinion among the persons whom we have consulted. An interest in the stories and adventures in which history abounds may be cultivated as soon as children begin to read at all. On the question where the formal and systematic study of history is to be begin, there is more divergence; two of the most eminent New England superintendents say, at ten years; others would begin at about twelve. In the opinion of your Conference children from nine to eleven may well begin by reading historical selections from standard authors, and the careful study of history ought not to be delayed beyond the eleventh, or at the latest, the twelfth year; our recommendations (Resolutions 12, 14) provide for at least two years of methodical study of history in the grammar school.

7. Question of consecutive Study.

Next comes the question, over how many years ought the study of history to be distributed? At present the average seems to be one year in the grammar schools, and two years in the high schools. A

few cases have been found in which history is systematically taught in each of four or five years of a high school course.

The inquiry involves the question of consecutive study. Shall we recommend a course in which the instruction shall be massed in a few years, a considerable number of recitation periods being appropriated in each; or shall we recommend that the study be pursued in a few exercises through a long succession of years? The German plan of education certainly turns out boys who are acquainted with details of history, and are able to make generalizations; that system calls for recitations in history and geography twice a week during the first two years, and three times a week during the following eight years of the course. The Germans believe, as the result of careful thought and observation, that the system of short courses with many exercises is pernicious; they find that the student educated in this way acquires a temporary interest only; and that the knowledge obtained, even though at the moment it may be more thoroughly comprehended, and may make a more vivid impression on the mind, is not so assimilated and made a part of the intellectual bone and sinew of the future man, as it is when, even once or twice a week, the subject is continued through a considerable number of years. In American schools the tendency is to compress the subject into a short period. The result is that history and kindred subjects assume an entirely different position in the minds of pupils, from that of studies continuously pursued. They get a notion that history ends and then begins again; the histories of different countries seem to them disconnected; and the value of historical training is almost lost by interruption and want of practice. We strenuously recommend, therefore, (Resolution 1) that "History and kindred subjects ought to be a substantial study in each of at least eight years"; and (Resolution 11) that "The eight-year course be consecutive."

8. Time now devoted to the Subjects.

In this, as in all these recommendations, it is not our purpose to lay down a hard and fast system for all schools under all conditions; but we do consider it essential that history be made a substantial subject for a fair number of hours during a considerable number of years. The actual time now devoted to these subjects is in most schools less than the importance of the subject demands. The smallest allowance observed in any school which pretends to teach history is twice a week for a term of twelve weeks. A very common allowance is once a week for a year in Ancient History, — manifestly a cram for entrance to college. A study of the reports of four hundred students, seems to show that two hundred recitation periods, or five periods a

week for a year, is a little above the average in the grammar schools; but in about three per cent of the cases as many as six hundred recitation periods are given in the grammar schools.

The secondary schools show a similar lack of uniformity. The smallest allowance observed is seventy-two exercises — apparently twice a week for a year — in two of the best known endowed academies of New England. In some cases history and kindred subjects reach seven hundred exercises in all; the largest allowance seems to be about nine hundred and fifty exercises during the secondary course. Perhaps the most thorough course which has come under our observation is that of a New England academy: three hours a week throughout the four years, or about four hundred and eighty exercises; but these are full hours with very thorough collateral work. The present average in high schools would seem to be two hundred to two hundred and forty periods in all.

Upon the question of the proper allowance for history, experienced persons differ; but two of the best known school superintendents in the country agree that it should continue during eight or nine years. The head of an excellent normal school suggests three hours a week through the whole course of study.

9. Time recommended.

Your Conference has considered these fundamental questions with due seriousness, and recommends (Resolutions 14, 16, 17) that the actual time devoted to history be not less than three forty-minute periods per week throughout the course of eight years, — a total of about nine hundred exercises in all. This is no more than is being done by some favored schools, and it has the support of many practical educators acquainted with the details of schools. It is, in the judgment of the Conference, a reasonable time to be devoted to the group of subjects — history, civil government, and political economy. It is about one-eighth of the school time of the child during two-thirds of his whole course, extending to the end of the high school. Where is this time to be found? We respectfully ask you to consider whether there are not some subjects in the grammar school curriculum which may reasonably give up part of their time to history. We particularly suggest that, in accordance with Resolution 25, the time given to political geography be so applied as to connect that subject with the study of history. To history may be assigned part of the time saved by a rational rearrangement of arithmetic. Finally, in view of the probable improvement in the study of English through the proper teaching of history, (Report, §§ 5, 32;

Resolutions 22, 23) we ask for a share of the time now devoted to language study.

It is not our expectation that such radical changes can be brought about in a moment; nor would the recommendation be made, but for the belief that the community expects a new provision for those subjects. We believe that the program which we suggest might at once be put into operation in the whole system of schools in some large cities; and that once established, it would gradually extend to schools where the conditions are less favorable.

10. Distribution of Time.

How shall the time thus suggested be distributed among the years of the school course? It has seemed to us desirable to introduce about one-half of the consecutive study of history into the grammar schools. The reasons for this arrangement hardly need be stated. The great majority of our children never pass beyond the grammar schools, and if these subjects are interesting, stimulating, and educating, they ought to be introduced early enough to accord their advantages to the child who does not enter the high school. (§ 2.) If the course is to be consecutive, distinct historical instruction would therefore begin four years before the pupil enters the high schools, and would end only with the high school course.

11. Question of Discrimination for those preparing for College.

The questions sent down by the Committee of Ten for our consideration include the following: "Should the subjects be treated differently for pupils who are going to college, for those who are going to a scientific school, and for those who, presumably, are going to neither?"

Several educational authorities advise such a separation. One New England superintendent thinks that a difference should be made "for the sake of its reflex effect on the secondary and primary schools"; others urge a more liberal provision for those who are not to go to college than for those who will have a later opportunity to study history; others think that the differentiation is made necessary by the preparation for college examinations; but no one seems to defend the system unhappily prevailing in some institutions, by which those who are to get most training hereafter are the only ones who have any training in history in the schools.

The Conference believes that such a distinction, especially in schools provided for the children by public taxation, is bad for all classes of pupils. It is the duty of the schools to furnish a well

grounded and complete education for the child; it is the duty of higher institutions to accept a well grounded and complete education as a suitable preparation for entrance upon their courses. Whatever improves the schools must improve the colleges; but our function seems to be simply to recommend the best system which we can devise for the schools, without taking into account any subdivision of pupils. (Resolution 30.)

IV. Subjects and Programs.

12. Usual Subjects.

It appears from a comparison of the statements of college students that of one hundred and fifty-four who have studied history in the schools, seventeen have studied general history, twenty-two ancient history, and thirty-seven English history. In the high schools ancient history is far more common because many colleges require it as a subject for entrance. The next subject in favor is English history. American history is studied in only about one-third as many instances in high schools as ancient history, and in one-half as many schools as is English history. General history is about as common as American history. Our most enlightened advisers favor a considerable variety of subjects, and an enlargement of the historical curriculum of the grammar schools. Many of them urge the introduction of English history, European history, and, in a few cases, French history. In the state of Wisconsin a recent effort has been made to induce high schools to offer at least one half-year of ancient history and one-half year of English history.

A course in general history is frequently suggested "because the general outline is necessary to secure a true idea of historical perspective. . . . Get the outline at the very start, and then keep filling it in." The opinion of the Conference is decidedly against single courses in general history, because it is almost impossible to carry them on without the study degenerating into a mere assemblage of dates and names. Most text-books used in such courses are dry and lifeless; better books do not give a sufficiently clear and exact picture. We admit the advantage of a broad outlook, but contend that it is not to be had by gathering together a mass of details with no opportunity to show their relations.

The outlook can better be obtained by connecting the general course of events with the history of one or more countries. (§ 16; Resolution 14.) Fortunately the subject of history, like that of natural science, is one in which the educational advantages may be

obtained without covering the whole field. It is important to look at the history of several countries side by side, and to notice the general movement of history, but that advantage may be gained indirectly in connection with specific subjects. (§§ 14, 15.)

13. Subjects recommended.

Out of the specific subjects we recommend Greek, Roman, English, American, and French history; and European history taught in connection with English and French history or in the year of intensive study. (Resolutions 2–7, 14, 16.) For the first three of these subjects the argument cannot be better stated than in the words of a practical teacher of history: "History is a unity. . . . The past lives in the present. I have no time for dry facts. I can give my children only life. Now what people of old times live most in the nineteenth century? . . . The tasks that press upon us to-day were first recognized in Greece. Here man put before himself in definite shape the specific problems that he wills to solve. Here he marked out the bounds of government, art, philosophy, literature, science; formulated and tested their principles; saw and stated clearly their problems. The work of the European world was mapped out in Greece, and here direction was given to human effort perhaps forever. So the study of history must begin with Greece, for in Greece all history is found in a nut-shell. . . .

"Roman history is the great central ganglion by which the history of the world is connected; Rome handed to us the civilization of Greece, gave us community of thought and ideals, rules us to-day in civil and ecclesiastical law. Hence Roman history lives in the present and must be taught. . . .

"English history has solved the problem of preserving local authority, selfish devotion to which wrecked Greece, and yet organizing it as efficiently as Rome did her empire. England teaches the world the secret of constitutional government and lives in every free state to-day. Hence English history must be taught."

American history needs no argument; it is already widely introduced; and the danger is not that it will be neglected, but that the schools may think it sufficient in itself. French history also commends itself to the Conference, because from the twelfth to the eighteenth centuries France was the leading nation of Europe, and her history is in a sense the history of civilization. General European history has the advantages of offering subjects capable of detailed and intensive study, and of furnishing a contrast to that development of the Anglo-Saxon race which is the main thought of English and American history. (§ 15.)

14. Inter-relation of Subjects.

In arranging these various subjects we recognize the desirability of offering a small number of subjects thoroughly taught, rather than of breaking up the courses into many detached parts. (§ 7.) At the same time there should be a logical relation between the parts, and a use of the comparative method. As the teacher quoted above says: "To impress the unity of history upon my children . . . I must feel it myself in its every detail. . . . I must feel the points of similarity and difference between the Athenian dikasteries and the Anglican jury system. . . . Constant comparison, cross references, the showing of the past in the present is the very substance of my teaching."

Hence the importance of choosing a suggestive point of view from which comparison is easy. "The proper organization and government of a State is the highest task presented to man. Hence the greatest emphasis in class work should be placed on political and constitutional history. . . . I find that my pupils turn with the greatest interest to the constitutional problems of history; they feel their political importance as bearing upon the issues of to-day. One of my girls said to me not long ago: 'I am just as much interested in watching the growth of the House of Commons as in watching the plants in my window.'"

The opportunity for comparison and the training gained from a study of other systems are both lost if the study of history is confined to that of our own country. The details of that history are to a certain degree "absorbed through the pores"; for it is constantly discussed in periodicals and newspapers. On the other hand our own history is best understood in the light thrown upon it by other history. "We are all Americans; that is to say we have all been surrounded by a given political and social atmosphere from our birth. We are thus in no position to understand our institutions. The more vitally important these are, the more inherent the peculiarities of our civilization, the less apt we are to become conscious of them." While including American history as a considerable part of the work, we urge that in all schools the history of some other country in addition to that of the United States be pursued.

15. Intensive Study.

The history of any great country is so extensive that the schools can hardly expect to teach more than an outline. Another system which has in it many elements of highly valuable training is to select a brief period and put intensive study upon it. This is the practice in one of the best schools for girls to be found in New England: "The

fourth year of the course is devoted to a special study of the period of American history extending from 1760 to 1790. The method is purely topical, no text-book being used." The importance of this intensive study was so strongly presented to the Conference that, after mature deliberation, it was voted that provision should be made for one year of such study. (Resolution 6.) This will offer an opportunity to apply, on a small scale, the kind of training furnished by the best colleges; it will teach careful, painstaking examination and comparison of sources; it will illuminate other broader fields of history; and it will give the pupil a practical power to collect and use historical material, which will serve him and the community throughout all his after life.

By vote of the Conference (Resolution 8) the following list of topics suitable for a year's intensive study is submitted, in accordance with Resolution 6:

1. The Struggle between France and England for North America.
2. Spain in the New World.
3. The French Revolution and the Napoleonic Period.
4. Some Phase of the Renaissance.
5. The Puritan Movement in the Seventeenth Century.
6. The Commerce of the American Colonies during the Seventeenth and Eighteenth Centuries.
7. American political Leaders from 1783 to 1830.
8. The Territorial Expansion of the United States.
9. American Politics from 1783 to 1830.
10. The Mohammedans in Europe.
11. The Influence of Greece upon modern Life.
12. Some Phase of the Reorganization of Europe since 1852.
13. Some Phase of the Reformation.
14. Some considerable Phase of local History.

It will be noticed that the list gives no preference to the history of one country over that of another. In any case, these subjects are only suggestive and many intelligent teachers will be able to find topics which the interest of their students and the resources of their libraries may make more suitable.

16. Distribution of Subjects and Eight-Year Program.

Perhaps the most difficult task of the Conference was to draw up a program in which a proper selection of subjects should be properly distributed. The result of our labors is set forth in Resolutions 12 and 14.

That the work of history should begin with elementary studies in biography and mythology, reënforced by good historical reading, needs no argument. The interest of the pupil is thus stimulated and he is

prepared to take up more serious study when the time comes. After two years of this kind of study in the grammar schools, a year of American history is next suggested because that is the subject in which local interest is most readily aroused, in which good parallel reading is easiest to find, and with which it is easiest to connect some study of civil government. For the fourth year we recommend "Greek and Roman history, with their Oriental connections." This order of subjects was strenuously urged in the Conference by professors and teachers of American history, upon the express ground that the large number of pupils who leave the schools at the end of the grammar school course should not be deprived of the opportunity of learning something of other civilizations. Classical history is now usually taught as a perfunctory subject in connection with studies in the Greek and Latin languages, and is rarely studied except by those who expect to go to college. This is an entirely wrong conception of the value of ancient history; it ought to be pursued for the sake of broadening the pupil's mind, widening his horizon, and bringing him into contact with a civilization so different from our own that it will suggest points of difference and comparison. No part of our recommendations seems to us more important than this, that something in addition to American history be taught in the grammar schools. It will be noticed, however, that in the six-year alternate course it has been found necessary to shift the Greek and Roman history to the first year in the high school (Resolution 16).

In the fifth and sixth years of historical study (the first and second years in the high school) we recommend French history and English history; here it is believed that the advantages of general history can be obtained without its drawbacks (§ 12). The intention of the recommendation is, that French history shall be considered as the central or leading history of Europe, about which shall be grouped the history of other countries. The subject, by its contrast, is an excellent means of bringing out the peculiarities of the following subject, English history, which the teacher should make the center of the great political and constitutional movement which England best exemplifies. In the seventh year it seems fitting that American history should again be taken up, this time with more reference to the development of the government and the character of statesmen. It seems particularly desirable to bring this phase of American history late in the course, when the students are more mature. Finally, in the eighth year, a subject is to be taken up for intensive or detailed study (§ 15). In this year we have desired to give the schools an opportunity to arrange a course each according to its own materials.

In this program we have not adopted either of two common ideas

as to the proper arrangement and relation of courses. The subjects as recommended do not follow one another in chronological order, although from the fifth to the seventh year they form a logically connected series. Nor has it seemed desirable to recommend a method not uncommon in Germany, by which the student begins with the history of his own city and widens out to his nation, to Europe, and perhaps eventually to the rest of the world. The effect of this process in suggesting the relative importance of countries is perhaps shown by the name of a hotel in Paris: "Hôtel de l'Univers et des États Unis." What is most distant geographically is most distant also in thought; if this process is at any point interrupted the child is left with the feeling that the world stops where his study has ceased.

17. Alternative Six-Year Program.

Although strongly of the opinion that a minimum of three exercises a week during eight years is no more than good schools ought to provide, and that time may be found for it without sacrifice of other interests of the pupils (§ 9), we nevertheless recognize the practical difficulties which in many schools would prevent the introduction of so elaborate a system. We have therefore drawn up an alternative program for a six-year course (Resolution 16). The principal differences are the omission of French history as a separate subject, and the omission of the intensive study of a special period; there is the further defect of leaving the grammar schools with no other formal study than American history. Nevertheless the Conference believes this course to occupy no more time than is already given in a considerable number of schools, and to be an improvement upon most of the present programs, particularly if it is properly connected with the study of historical literature. (§§ 30–32.)

18. Civil Government.

Civil Government is pursued at present in very few grammar schools, — certainly in not more than one-sixth of those which have come under our observation. It is, however, rather a frequent subject in high schools, about one-third offering some sort of instruction in it. In actual teaching it seems little associated with history; it is usually simply a text-book study during a part of one year; and very few of the teachers seem to be familiar with the subject.

Among experienced teachers there seems to be a difference of opinion as to the proper place of the subject. Some would introduce it early in elementary form, on general topics; others would make it an elaborate study late in the high school course. The Conference in

Resolutions 10, 14 and 16 has attempted to reconcile these two principles by introducing the study in two places, but always in connection with history, and as an adjunct to that subject.

While recognizing the importance of the study of government as a discipline and as an education for American citizens, we do not feel justified in recommending more time for the subject than is now employed by the best schools. We expect that it will occupy, including the elements of political economy (§ 19), about one-half the time devoted to the group of historical and kindred studies in each of the two years recommended; and we believe that this distribution is much better than the more common system of giving the subject a considerable number of hours during a few weeks only. But it is expected that good teachers in dealing with history throughout, and especially with American history, will constantly refer to the forms and functions of government with which the children are most familiar.

The question what subjects should be taught and what ground covered in the study of civil government is one which we have not thought it necessary precisely to determine. One system begins with the local government, as nearest to the child, and thence leads up through the State to the national government. Another method takes up first that which is most likely to attract the imagination of the child, the great machinery of the national government and its more striking functions, such as the postoffice, the army, the navy, and the collection of customs. Another principle is to associate with government practical ethics and rules of conduct. Each one of these systems, properly taught, has its value and may come within a program of history and kindred branches. Your Conference would, however, express the belief that the theoretical questions of government, such as the origin and nature of the state, the doctrine of sovereignty, the theory of the separation of powers, etc., are very difficult to teach to children; and further, that a system of ethics can better be taught by example and by appealing to common sense and to accepted standards of conduct, than by formal lessons. On the other hand the simple principles underlying the laws which regulate the relations of individuals with the state, may be taught by specific instances and illustration; and the machinery of government, such as systems of voting, may be constantly illustrated by the practice of the communities in which the children live (§ 34).

In Resolutions 28 and 29 the methods of study approved by the Conference are distinctly set forth. In the grammar schools the instruction ought to be simple and practical, using books and familiar institutions only as illustrations and collateral material; the study of

civil government and that of history ought constantly to work into each other and to support each other. In the high schools civil government may be taught more elaborately; and here is an opportunity of which also some use may be made in the grammar schools: that of sending children to study their own local and state government in operation. A teacher of experience, a member of the Conference, has for years been in the habit of taking his high school class in civil government to the local courts, to the city councils in session, and to the capital of the state, fifty-six miles away, to see the legislature in session (§ 34). Other helpful methods are debates, mock town meetings, mock legislatures, reports of proceedings of legislatures and of Congress. At this stage the study lends itself to the topical method (§ 33), and pupils may be encouraged to prepare papers on the local institutions about them.

The subject of government is so difficult and requires so much practical illustration that the Conference would not recommend for schools an elaborate study of foreign systems. They believe, however, that constant reference to parallels or divergences in foreign politics will be interesting and helpful (Resolution 29). They commend, especially, reference to the German and Swiss governments, as suggesting different methods pursued by nations governing themselves under systems similar to ours; study of the English government, as presenting the contrast between the parliamentary and the committee systems, and study of the French government as a type of highly centralized systems, in which local government is entirely subordinated.

19. Political Economy.

The subject of political economy appears to be taught in only about one-twentieth of the high schools, and, in most cases, even there is confined to routine study and recitation from a text-book. Here, as in civil government, we believe that the essential principles are not above the reach of high school pupils; but that an attempt to master the whole subject will result in the understanding of only a small part. Few schools have teachers sufficiently trained to discuss and illustrate the general subject; nor are there proper text-books for high school use. It is believed that the subject is not attempted in schools of other countries corresponding in grade to our high school.

Upon no question which the Conference has considered is there greater difference of opinion among the persons consulted. Some eminent superintendents and principals would introduce or continue political economy in the last year of the high school course, or at least, in the last half-year. "Daily lessons for about twelve weeks

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would be ample," says one. On the other hand several teachers assert that political economy "has no place in secondary schools." "It is not proved that the subject can be advantageously taught in secondary schools, nor is the contrary proved." In this difference of opinion it has seemed to the Conference wise, to recommend that there be no formal instruction in political economy, but that the general principles be taught "in connection particularly with United States history, civil government, and commercial geography" (Resolutions 9, 30). The subject would, therefore, appear in its most elementary form in the third year of the grammar school, and would be revived in the last two years of the high school. In both places the subject should not be introduced as a distinct and separate science; but as illustrating government and political questions. In connection with Resolution 30 the Conference adopted the following memorandum:

"It is suggested, for example, that when the tariff history of the United States is being studied, the laws of value, the conditions of production, and the principles of exchange, especially as relating to international trade, be explained; that in connection with the study of the development of means of transportation, such topics as the concentration of population and of industry, the organic character of society, the corporate organization of industry, the capitalistic mode of production, the process of distribution, monopolies, labor organizations, etc., be discussed; that in connection with a study of Jackson's administration, the subjects of crises, banks and their functions, the functions of money, the laws of its circulation, bimetallism, paper money, and kindred topics be presented; that in connection with the study of our great wars, certain topics in finance be introduced, as for example, the principles of war finances, the history of our debt, the process of debt conversion, and the methods of paying public debts; that in connection with the study of civil government, such topics as the assessment and collection of taxes, the principles of taxation, the kinds of taxes, the functions of government, the formation and vote of the budget, the expenses of government, etc., be studied.

"In making these recommendations the Conference does not intend to suggest that less time than is customary be given to political economy, or that less emphasis be given to its importance as a study in the high schools; but rather that emphasis be laid on vital topics, and that less time be devoted to controverted subjects and unsettled questions."

It is desirable to avoid the impression that political economy is an abstruse science of which no part can be understood without the mastery of the system; teachers ought to set forth the principles of finance, commerce, and business, as a part of the everyday life of the community. The methods of teaching the economic principles thus indicated must be left to the discretion of the teacher. It is a subject

in which text-book work is particularly inefficient, and no teacher ought to undertake the work who has not had some training in economic reasoning. The only methods which can possibly be successful are those which call upon the class for independent thought and suggestion.

V. College Examinations.

20. Present Requirements.

The usual requirement in history, where the subject appears at all in the conditions of entrance to college, is an elementary knowledge of the history of one country, or at most of two countries. The usual subjects are Greek and Roman history, — which are supposed to be taken up with classical study, — or American history; in a few cases English history is also, or may be, a subject for examination. These requirements differ in amount and in application, and it would undoubtedly be a reform of much value if they could be made simpler and more uniform. The present subjects are very unsatisfactory, not because they are uninteresting in themselves, but because in many schools they are studied with a view only to the college examinations, and without reference to any preparation for life. In one of the schools in which preparation in history is best and most systematic for other pupils, boys and girls who are going to college are habitually deprived of that instruction, and are systematically crammed during a few weeks preceeding examinations. It is complained that "at present, examinations compel the teacher to accept bad methods for college preparation." We have not felt called upon to make any recommendations on the general subject of entrance to college; but we desire to enter a protest against the present lax and inefficient system of historical examinations, and to urge a change by which schools which use proper methods shall have some advantage.

21. Suggestions of Improvement.

The dissatisfaction with the present system is shown by many protests from teachers. "The requirements for college ought to be so framed," says a high school teacher, "that the methods of teaching best adapted to meet them will also be best for all pupils." Examinations "should be such as test the powers of the pupil and the methods of the teacher: analysis of subjects should be demanded; . . . statements from analysis required. The pupil should be asked to state what books he has used in his course of study, and what

service each book has done him; what methods are employed in his school; what work he has done in libraries. . . . In short, the mental training, alertness, and intelligence of the pupil should be tested rather than memory only."

A very ingenious suggestion, which deserves the attention of college authorities, is that the colleges accept any combination of two historical studies, — as Greek and American, French and English, — as a proper preparation for college, allowing additional historical subjects as advanced requirements. This method if adopted would go a long way to increase the number of historical subjects taught, and would facilitate the adoption of the reforms suggested by this report (§§ 13, 15).

Between the system of examinations and that of certificates the Conference has no recommendation to make, believing it to be a general subject which lies outside the present discussion. Where certificated are accepted, it is the duty of the colleges to take them only from schools which have suitable libraries and pursue intelligent methods. Where a college accepts no tests but its own, a proper written examination seems as fair a system as can be devised; but examinations may be so framed as to throw more weight upon general knowledge, and less on memory.

In Resolution 32 we have decidedly expressed the opinion that less attention be paid to detail and more to a power of comparison and judgment. Schools which adopt an improved general system of teaching history will give to their pupils a training in some respects of the same nature as that gained from science. Although it is impossible in history to simplify and vary the phenomena which are observed, it may nevertheless be made in part a laboratory subject. In some colleges the entrance requirements in physics call for an examination, but the pupils also submit note-books as evidence that they have pursued their previous work in a systematic and scientific fashion. We believe that a similar system may be applied with good effect to historical examinations. Besides the regular written tests, papers prepared in the schools may be submitted as a part of the evidence of preparation (Resolution 33). The effect would be that schools which had properly used collateral reading and other material would be more successful in getting their boys into college than those which depended solely on text-books; and that the colleges would be greatly improved by receiving into historical courses boys and girls who had had preliminary training of a proper kind. The time has come for the colleges to set their faces against perfunctory text-book methods in history, in the same manner as in classics and natural science.

22. Time of Examinations.

The question with reference to a division of examinations is answered in our Resolution 34, which agrees with the majority of the opinions collected from historical teachers upon this subject. With a proper system of examinations the eighth or intensive year would do most to prepare for entrance to college, and the examination would therefore naturally come at the end of the course. Hence history should be a "final" subject and not a "preliminary."

VI. Methods of Historical Teaching.

23. Present Methods.

The last question submitted to the Conference is: "Can any description be given of the best method of teaching throughout the school course?" In our judgment the selection and arrangement of studies in the schools, imperfect as they now are, need reform less than the methods of teaching. In the grammar schools very few teachers know any other system than simple recitation by rote from text-books; and this is particularly the case in large city schools. The text-books are frequently poor and antiquated, and often have made so little impression upon the pupils' minds that their very names are forgotten. Outside reading and topical work does not appear in more than one fifth of the grammar schools, and is imperfect even in these. Not much better is the condition of the high schools and academies; in one hundred and thirty-five cases examined, all had recitations; sixty-nine used some kind of outside reference books; twenty-six used oral topics; forty-seven used written topics; in fifty-five there were written lessons; in eighty-two appears some kind of geographical instruction; but only in fifty-eight any form of map drawing. The apparatus for outside reading is usually small, although some high schools have large reference libraries. The present methods throw entirely too much stress on a few brief text-books; and comparatively few teachers have the spirit or the apparatus to carry their classes outside those narrow limits. Hence at least one experienced member of the Conference was at first inclined to think that possibly history should be omitted altogether from school programs, because, he said, teaching by rote from text-books made the subject disagreeable; and because it led to indefinite ideas, which were in many cases worse than none. The first necessity, he thought, was an improvement in the teachers.

24. Improved Methods.

Nevertheless the Conference had before it detailed accounts of at least three widely separated yet highly successful schools, in which history is taught in a common-sense and efficient manner; and they were greatly encouraged by the interest shown by pupils in those schools. The first is an academy in a State capital, in which history begins for very small children, with stories of heroic characters; then United States history and Cox's Mythology are taken up side by side; in the third year English history is begun; then American history, including the history of French and Spanish America as collateral with that of the English settlements. In the later years the pupils use the large and well appointed State Library. The master makes it his object to present history to them as a basis of enjoyment of art and literature; thus, he teaches American literature in connection with colonial history. There are constant references and comparisons from one field of history to another. Throughout the course he has in mind an ethical purpose — to suggest the causes of personal and national greatness and weakness; and his boys always elect history after they get into college (§ 34).

The second of these schools is a high school in a prosperous New England town; here note-books are used in the classes, and there are special topics for investigation, supplementary talks by the instructor and by members of the class, assignments and reports of collateral reading in history and literature, and debates on points upon which opinions or authorities differ. The third school, an endowed academy of a high grade, presents a systematic four-years program, covering successively Greek, Roman, English, and American history, with extensive parallel reading and much written work throughout.

These accounts, and those of similar schools, seem to show that good teaching of history is obtainable under present conditions, and that it is safe to recommend extended and systematic teaching of history with the expectation that some schools can at once adopt it in its entirety, and that it may gradually work its way into the system of American education.

25. Training of Teachers.

"Above all, the teacher must keep up with the times in books, methods, lines of thought, and interest . . . she must realize that the world is always passing on, and that, like Alice in Wonderland, she must run as fast as she can to keep where she is. . . . She must

keep herself in connection with the great teachers of her time." That this ideal is not reached is shown by the lack of preparation on the part of most teachers of history.

In Germany such teachers are almost invariably specialists. Such subdivision is not uncommon in our large city high schools and academies; but at present the work is very frequently divided up among teachers of other subjects, none of whom has any real interest in history. The opportunities of getting good historical training both by men and women are now such that, in the judgment of the Conference, all high schools and academies able to pay good salaries ought to insist that the teacher of history should have "a knowledge of illuminating methods of teaching history." Even under unfavorable conditions we believe that too high a standard is not set up by Resolution 19: "That in all schools it is desirable that history should be taught by teachers who have not only a fondness for historical study, but who also have paid special attention to effective methods of imparting instruction." In other words it would be as sensible for schools to employ a deaf and dumb person to teach reading, or to ask a Cherokee to teach Latin, as to depend for the teaching of history on persons who have not had special training in history. The supply of suitable candidates is now, or soon will be, such that no School Board need put up with incompetent teachers of history.

What is to be done with the teachers already in service who cannot take even a year of special study? Some system of special teachers' courses must be devised, with practical work going on during the school year. When it is established there will doubtless still be some bad teaching, but it will be without excuse. In the smaller high schools the problem is more difficult, because the teachers are fewer and must divide their time among several subjects; in such cases the first step is to employ teachers with a good all-round training, with some preparation on each subject they undertake, in preference to those who have a smattering of many subjects. In the grammar schools the subjects are simpler, the collateral reading and illustrations easy to apply, and the necessary training is correspondingly less. Perhaps the introduction of the "departmental method" would improve the status of history in schools of that grade. Here, also, fair dealing requires that the teachers now in service have some opportunity to improve themselves. Is it not the duty of the universities in or near large cities to coöperate with the schools in establishing training courses?

26. Lectures.

What shall be the teacher's method of imparting his superior knowledge? Shall it be by lectures? It is the general opinion of experienced teachers that history should begin with simple stories told to the child; a little later they may read in books like Hawthorne's Wonder Book, or Bulfinch's Age of Fable, or from the collections of stories on American and English history. It is only in the later stages of the course, if at all, that formal lectures are applicable to school instruction.

One form of lecture is, however, both admissible and desirable; it is well in a brief talk to present the substance of the next or of approaching lessons, so as to suggest to the scholar the relations of the facts he is about to study. "In my presentation of a subject," writes a teacher, "I always work from circumference to center. I sketch, first, the barest outlines of the whole, so that the pupils may see the bearing and feel the relative importance of the subject in hand. For instance, if we are studying the Hannibalic Wars, the pupils know that this is one of the seven or eight great wars by which Rome conquered the world, that the period of conquest is one of the four periods of the Roman republic, and that the republic is one of the three forms of development which the government of Rome assumed."

Set lectures on the lesson, while very suitable for colleges, are not so well adapted to schools. To be useful they require elaborate note-taking, — a severe strain if well done, and if ill done productive of mental dissipation. We incline to recommend only informal talks which will explain the cause and effect of events, and which may add interesting illustrations and comparisons to the lesson of the day, as it appears in the text-book. In the advanced grades, an interesting and profitable exercise is to call upon pupils to prepare lectures under the direction of the teacher; on these, notes should be taken by the other pupils. If the subject is then reviewed at another exercise by the teacher, both the pupil, lecturer, and hearers will be quickened.

27. Text-Books.

In Resolution 20 we recommend: "That after the first two years a suitable text-book or text-books should be used, but only as a basis of fact and arrangement, to be supplemented by other methods." Since the text-book is, and ought to be, the center of the study of history in schools, a good text-book is essential. This simple and

self-evident principle is not carefully observed. A rough analysis of the books used in one hundred and forty-nine high schools seems to show that seventy-six have poor books. The criteria of a good text-book are: first, that it should be written by an expert in the subject, who knows what to save and what to throw away; second, that it should be arranged in a convenient form, with running headings, tables of contents, indexes, and other aids; third, that it should deal with the essentials of history, avoiding accounts of military events, or the mere outline of political discussions; fourth, that it should be embellished with numerous and correct maps to which repeated reference should be made in the text; fifth, that it should be interesting to the average reader, and lightened by suitable illustrations and quotations from contemporary authorities. A few text-books possess most of these characteristics, but the present system of selecting or of placing text-books in the schools does not seem to give suitable preference to the better books. In the judgment of the Conference a text-book ought to be something more than the mere development of a "story," it ought to include something on the social and economic side, as well as on the political; and it ought to refer to, and facilitate, outside reading and the preparation of topics.

We recommend further that a practice be established in the schools of using two, three, or four parallel text-books at a time. (Resolution 21). By preparing in different books, or, by using more than one book on a lesson, pupils will acquire the habit of comparison, and the no less important habit of doubting whether any one book covers the ground. The practical difficulties are few; where school boards buy text-books four sets of ten books each cost no more than one set of forty books; where pupils buy their own books classes may be divided into three or four groups, the members of each group providing themselves with the same book.

28. Recitations.

What is learned in the text-books ought in most cases to be brought home to the mind in recitations, which should be less a test of faithfulness than a supplement to the reading. It is better to omit history altogether than to teach it in the old-fashioned way, by setting pupils painfully to reproduce the words of a text-book, without comment or suggestion on the teacher's part. The first duty of the teacher is to emphasize the essential points in the book, to show, if possible, what is the main thing worth remembering in the lesson of the day. It is also a duty to point out things which the writer of the text-book has inserted, but which, in the teacher's judgment, may safely be

neglected. Few teachers have the courage to do what a member of the Conference recently saw done in class: to tell the children to "pass over Appius Claudius and the sacred chickens because they were of little account." The teacher may have underestimated the historical value of legend; but she sent home to the minds of her pupils the wholsomee thought that not all is essential that appears in print.

Again, the questions in a recitation ought not to demand from the pupils a bald repetition of the phrases or ideas of the book, but ought to call for comparison and comment. The questions ought constantly to go forward and backward, to bring up points of comparison from previous lessons, and to bring in illustrations from other parallel subjects. A course in American history may be made doubly interesting by frequent cross references to previously studied Greek and Roman history; and a course in English history is enriched by illustrations from English literature. Here is the place where the teacher's superior knowledge and training tells; here is the place also for stirring up the minds of the pupils.

How far should pupils be expected to memorize? "A few things should be learned by heart and, when forgotten, learned again, to serve as a firm ground work upon which to group one's knowledge: without knowing the succession of dynasties, or of sovereigns, or of presidents, or the dates of the great constitutional events, the pupil's stock of information will have no more form than a jelly-fish." But those few necessary facts ought to be clearly defined as only a framework to assist the memory. The pupil's stock of material is to be kept in mind not by calling for it in glib recitations devoid of thought, but by constantly framing questions which will require for an answer a knowledge of the necessary facts; thus, a comparison between Henry VIII and Charles I requires a pupil to remember the essential dates and events of both reigns, and their relations of cause and effect.

29. Further Suggestions as to Recitations.

An excellent suggestion is that of "open text-book recitations," in which with their books before them, pupils are asked questions on cause and effect, on relations with previous lessons, etc.; answers may, if necessary, be written out and corrected in class. Such an exercise trains pupils to take in the thought of a printed page, and to grasp the essential points.

Such a system tends to encourage the habit of applying what one knows to a new problem. Still more helpful in the same direction are the off-hand discussions and impromptu debates which spring up

in an eager class and which should be encouraged by every good teacher.

In many schools there are systems of review, too often perfunctory repetitions of what was dull when first recited. Some system is perhaps necessary to recall the attention to the relations of the parts of the subject. Two helpful substitutes for the ordinary review may be mentioned. The first is that of "fluent recitations." "The pupil is given the entire subject, for instance the Homeric Age, the Conquest of Italy by Rome, the Early Norman Kings, the New England Colonies. To recite these 'fluents' are the special glory of the class; the brilliant recitation that holds the interest of all the pupils, although the subject is familiar, is one that is especially prized. After the 'fluent' is finished it is criticised as to matter and manner; the English, the attitude, and intonation of the reciter all coming under fire, as well as the historical matter."

The second device is thus described. "But a very important part of the work yet remains — the fixing of the whole indelibly on the mind. This is attempted by what . . . . are called 'cards' *i. e.* a raking fire of short, sharp questions every morning to which a prompt direct answer is required, or the dread 'next,' 'next,' 'next' is heard. To fail in cards is thought a great disgrace, for they are taken up only when the subject has been most carefully explained, and failure in them is an evidence of unfaithfulness on the part of the pupil." . . . . These systems are admirable if applied so as to teach pupils to combine what they know, and to bring their knowledge to bear on unforeseen problems.

Another form of recitation is the written exercise repeated at frequent intervals: a single, properly framed question given at the beginning or end of each recitation, with ten minutes to answer it in writing, will train pupils in the habit of combining and applying their own information. For such an exercise questions involving comparison are well adapted. A good question would be, to make up a list of the sovereigns of England who were born out of the realm; or, after a lesson on the English in India, might come the question whether the occupation of India had been a good thing for the English nation.

The blackboard is used in some schools; the recitation begins with an analysis of the subject for the day, prepared by the teacher, and written out beforehand, or written by a pupil in the presence of the class. This, of course, emphasizes the teacher's own subdivision of the subject, as contrasted with that of the text-book, and breaks up the feeling that facts in order to be accurate can be stated in only one order. A few text-books have been prepared with topical

analyses of this kind, and in a good school pupils are sometimes called upon themselves to prepare a suitable analysis for the criticism of the teacher and of the class (§ 32).

To sum up their recommendations on this point, the Conference is of the opinion that text-books must continue to be used, but that they should be carefully selected, and that the pupil should have the constant use of at least two different books; that the recitations upon them should not consist of an historical catechism, but should be made up of suggestive questions requiring a comparison and combination of different parts of the pupil's material; and that the proper relations and proportions of that material may be promoted by some system of rapid recitation, with criticism by teacher and class.

30. Reading.

Recitations alone, however, cannot possibly make up proper teaching of history. It is absolutely necessary, from the earliest to the last grades, that there should be parallel reading of some kind. In Resolution 19 we recommend: "That in the first two years oral instruction in biography and mythology should be supplemented by the reading of simple biographies and mythological stories." The numerous historical readers and selections of stories and poems now offer a large amount of suitable introductory matter; when regular text-book work begins, this system of parallel reading should be continued. "The sooner we can get a boy into touch with something else than a hand book, the better." This principle is expressed in Resolution 21. "That pupils should be required to read or learn one other account besides that of the text-book, on each lesson." Such parallel reading must necessarily take two forms: in the first place, the use of distinct historical literature bearing immediately on the subject in hand; and, secondly, the use of miscellaneous literature, poems, historical novels, and biographies.

The system of more elaborate reading is well described as follows: "The class work should be as elastic as possible, that it may adapt itself to the different kinds of minds. I must surely give my brightest pupils food enough, for a teacher's greatest fault is starving her children, yet I must not crowd the weaker ones. . . . Certain books bearing upon the subject in hand are designated to the pupils; every one is required to read something outside her daily work, and the better scholars are expected to read more. A special report of the work done is handed in Monday morning, with the private note-books containing a topical analysis of what has been read and original remarks upon it. The reports and note-books are examined and commented upon by the teacher."

31. Material for Reading.

Such a system, of course, requires a considerable school library. Out of one hundred and fifty-one high schools whose methods have been examined, only about fifty appear to have a good library of ordinary reference books, and only about forty a general library of comparative historical literature. Yet to provide a collection of books suitable for school work is not an expensive process: one hundred dollars, or fifty dollars, or even twenty dollars properly applied, will furnish a reserve of historical literature for the use of the pupil.

In addition, of course, every special subject ought to have a little galaxy of standard books grouped about it. Resolution 27 reads: "That a collection of reference books, as large as the means of the school allow, should be provided for every school, suitable for use in connection with all the historical work done in that school." Wherever public libraries exist, it is almost always possible to arrange for their use by the pupils of the public schools; and in a few favored places like Albany, there are special reference libraries of great value for historical work. Something may often be accomplished by making out a list of desirable books and asking each pupil either to buy one or to contribute to the purchase of one: in the course of a few years a considerable library may thus be brought together. Every school board which is willing to buy chemical and physical apparatus, may be brought to such a state of grace that it will buy reference books.

The main necessity is that teachers should have it firmly fixed in their minds that it is as impossible to teach history without reference books, as it is to teach chemistry without glass and rubber tubing. This system may also be so arranged as to create in the minds of pupils a desire to possess and use books, which will do much to break the monotony of their lives and to cultivate the habit of judicious expenditure. The time has been when in the houses of many intelligent families, educated in the common-schools, and reading newspapers regularly, almost the only books were the Bible and a Patent Office Report. It is the duty of the schools to make the return of such conditions impossible. Where expensive collections of documents can not be had, the sets of leaflets, which are now issued in a variety of forms and on a variety of subjects, may be used, at a smaller expense.

Another sort of illustrative reading may take the form of special exercises in literature, such as the study of poems on American colonial life in connection with American history; or of Chaucer with

English history. We feel hesitation with reference to historical novels: the natural tendency is to skip the history in them or to receive a false historical impression if the history is accepted. Nevertheless, there are standard historical novels which will always be read, and which will always leave an approximately correct picture of the times which they describe. It goes without saying, that pupils should be encouraged to read general historical literature at home, outside of any immediate connection with their studies. Only about one-half of the students who enter one of our great colleges have read at least one work of such historians as Prescott, Macaulay, Irving, Green, or Bancroft.

32. Written Work.

The written exercises required in connection with history vary all the way from a page of a note-book to an elaborate study from the sources. In two ways such exercises tend to the education of pupils: they give excellent practice in the collection and selection of material, and they afford an invaluable training in judgment and in accuracy of statement. Besides the written recitations already described above (§ 28), some teachers require notes and abstracts of analyses to be made up from books. "Collateral readings in history are assigned and reported on. Another exercise is the so-called written analysis, in which having gone over the ground of the lesson a pupil is sent to the board and writes an analysis of the lesson; his selection of topics is then criticized by the class, and the form of expression is altered until put into the . . . most striking phraseology. . . . This exercise in analysis I find of the utmost value; it trains the children in discrimination between the essential and unessential, in putting facts in the right perspective; it teaches them to handle books . . . its tabular arrangement shows at a glance the bearing of each part upon the whole. . . . The page of topics is also an essential help to the memory, hence is, psychologically, a valuable device for younger pupils." Another system is to call for "special reports," brief and summarized statements upon a subject specially assigned. Such work in most schools would, of course, be based on secondary authorities; but the arrangement and the results should be the pupil's own. The subject of such a written report should be sufficiently minute, so that the pupil may learn all that is worth knowing in the authorities at hand (§ 33). One form of this written work may be the requirement to prepare a bibliography of all the references available on an assigned subject. This is particularly applicable to biographies of public men; and the results thus obtained may be left on

file and may be referred to for later reports. The method tends to train pupils to use bibliographical aids, the short-cuts to historical material.

The second general system of written work in connection with history is set forth in Resolution 23: "That the teaching of history should be intimately connected with the teaching of English . . . by writing English compositions on subjects drawn from the historical lessons." In few schools has this connection between the two kindred branches been established. The necessary work of reading parallel references may thus be made to serve a double turn, and the amount of reading may be correspondingly increased. Your Conference need not dwell upon the importance of such a connection, as developing both the power of expression, and the power of dealing with historical material.

33. The Topical Method.

The third general system of written work is the preparation of topics; Resolution 22 reads: "That the method of study by topics be strongly recommended, as tending to stimulate pupils and to encourage independence of judgment." Resolution 26 adds: "That in all practicable ways, an effort should be made to teach the pupils in the later years to discriminate between authorities, and especially between original sources and secondary works." It is not expected that pupils in grammar or high schools are to be historical writers, or that they are to suppose that they are carrying out historical investigation to its widest extent; but we confidently and urgently recommend the use of this historical method because of its peculiar educational value. It is the system in use in German schools of a corresponding grade, and accounts in part for the development of historical investigation in that country.

One year of the eight-year course has been set apart for what has been called "the intensive study of history," *i. e.*, the more minute and careful study of some limited period, with as much use of the sources as is practicable. (§ 15.) The topical system can, of course, be applied in that year, but it is applicable throughout the course, especially in the latter half. The first point to notice is, that the topical method requires the pupils to do part of the work, and, in well advanced courses, it may very sensibly relieve the teacher from the necessity of minute investigation of the whole ground for himself. In the next place, the topical method may be so employed as to introduce the pupil to the sources, which are the life of history.

Two sorts of work are combined under the single title of the topical method. In the first place it may be used as a system of

division of labor, the topics taken together covering substantially the whole ground of the course; and recitations may then be held upon the topics, taking advantage of the special preparation of one student on each topic. "In selecting topics, care should be taken to make them cover only one simple subject. Questions should not be assigned about which no definite information is to be had. . . . Biography lends itself easily to this method; any number of subjects of about equal difficulty may be found, and it is easy to secure a lucid, well arranged report. Where the topics are numerous, the teacher owes it to his pupils to give them a good outfit of specific directions and specific references; for an occasional theme it is an excellent plan to turn a pupil loose into a library; but where he is expected to learn something valuable about his topic in a short time, he must not be discouraged by the mass of books; he must have his clue. . . . The return of the work in the precise outward form required should be insisted upon, because it is of much importance to be able to put information into a shape useful to another person, and the labor of handling the papers is thus greatly reduced, There is plenty of room for personality in the choice of books and the selection and arrangement of facts. Great care must be taken to prevent the pupil from simply reproducing what he finds in one or several books. From the very outset the pupil should be taught always to append a brief bibliographical note, setting forth the source of his information and giving exact references to volume and page. Bright scholars may criticize each other's work; and the selection of the best papers to be read in class will be a reward." The method thus described in general terms is widely applicable to schools of almost every grade in which history can be taught at all. Perhaps the principal objection is the necessary correction of the written work; here, as in other written exercises, a great deal may be done by exchanging papers among the pupils and calling for criticism of pupil upon pupil; or by taking up topical exercises and criticising them in class with the help of the class.

The second purpose of the topical method is the study of sources. Says a member of the Conference: "The original sources are often more delightful reading than the most striking descriptions of Gibbon, or Taine, or Macaulay, and in many cases quite as ready at hand. The real short-cut which leaves hundreds of volumes of formal history at one side, if we are really intent upon getting the greatest good from our work, lies through the study of the sources. Unconsciously moulded as these are by the spirit of the time in which they were written, every line gives by innuendo an insight into the period which the author certainly never intended, and which volumes

of analysis can never reproduce. The mere information, too, comes in a form which we cannot forget if we try." No part of historical education does so much to train the pupil as the search for material, the weighing of evidence, and the combining of the results thus obtained in a statement put into a form useful to other persons. Collections of suitable material are already numerous, and are rapidly increasing. To make such a system successful it is necessary that no two members of a given class shall have the same topic; this precaution gives to the pupil the agreeable sense of a separate and independent piece of investigation. Of course the topics must be very limited in scope; the writing of elaborate theses and monographs in the schools is not to be commended; all the good results can be had by a succession of brief pieces. The material to be used may comprise the local records, which, in the towns possessing them, have seldom been carefully used. Occasionally families have a little store of manuscripts; or such collections are to be found in local libraries. The main dependence, however, must always be on printed records such as the Colonial Records of the older States of the Union; the calendars of British State papers; the State and national statutes; the United States printed collections of documents; the correspondence and other writings of statesmen; elaborate biographies and reminiscences, town and county histories; periodicals and old newspapers. The work is within the reach of good teachers, without very elaborate or expensive apparatus.

34. Illustrative Methods.

All methods of teaching history may be made more effective by having the proper surroundings, and by making use of illustrations drawn from the experience of the community. An attractive classroom is an incentive to historical study. In many schools something may be done by encouraging the pupils to bring in historical pictures; these may be of every degree of value from rough wood-cuts taken out of daily papers to portraits and engravings of historical scenes, and photographs of famous places or buildings. In one school the teacher has a large collection of pictures cut from illustrated newspapers and pasted on cards. In choosing text-books care ought always to be taken to see that its illustrations, if there are any, represent something real; pupils are sometimes quick to see historical inconsistencies. A picture in a well known historical textbook purports to represent Braddock's headquarters; but in the foreground is a flag-staff with the stars and stripes displayed. The use of the magic lantern is becoming more and more common as a

means of instruction, and where schools have not the opportunity to make a collection of slides for themselves, they may often call in lecturers for occasional illustrated talks, or may avail themselves of University Extension or other courses of lectures.

Next in importance come accounts of historical places from those who have visited them. Any class may be interested in an account of the city of Washington and of the Houses of Congress in session, especially if illustrated by graphic aids. In many places, however, the historic scenes are at hand, and all that is necessary is to point them out to the class, although not every city is so fortunate as that which possesses the Washington elm, the Longfellow house, and the James Russell Lowell mansion. The study of history may also be made a means for those rambling excursions which should do much for the health of the children. Where historical places are lacking there are often interesting collections; the larger cities have art museums, which are invaluable for the light they throw upon ancient history; and many cities have libraries with rare and interesting books. Everywhere there is the opportunity of illustrating history and particularly civil government, by the local government of the place (§ 18).

Another means of illustration is to set debates on subjects which occur in the lessons. School debating societies are very common, and might be made still more instructive, if pains were taken always to set questions which permitted the debaters to use their own judgment and knowledge. An excellent device in such debates is to require each side to submit preliminary written briefs, with arguments arranged in logical form and provided with specific reference to authorities. Of a similar value are mock legislatures, parliaments, conventions, and diplomatic congresses, — an interesting form of object lessons. (§ 18.)

Finally, history ought constantly to be illustrated by reference to the lives of great men. This is the opportunity for ethical training. Boys who cannot understand the development of the Athenian constitution, and who painfully learn and easily forget the military details of the Greek wars, may be animated with interest over Themistocles, or Cicero, or Charlemagne, or Luther, or John Wilkes, or John C. Calhoun, or Abraham Lincoln. In Germany, the pupil "goes over universal history three times in as many different ways. The first time, all history is encompassed by what may be called the biographical method." Biography is not all of history, because even the incidents of great lives are important chiefly in their relations to each other; but biography clings to the memory, and a later, more systematic study will show the connection with national development.

35. Historical Geography.

"Geography, the twin sister of history, has, as yet, had but a cold reception in the historical family; only about one half the schools make the study what it should be, an essential and integral part of the study of every period." Our recommendation on this subject is set forth in Resolution 25, "That the study of history should be constantly associated with the study of topography and political geography, and should be supplemented by the study of historical and commercial geography, and the drawing of historical maps."

This resolution suggests three directions in which the study of geography may be made a helpful adjunct to history. In the first place, from the beginning of geographical study, attention should be paid to the physical outline of each country, not only with reference to its productions, but to the movement of races, the progress of settlement, and the establishment of centres of population. For instance, it should be shown how the commercial greatness of Chicago and of New York depend on a simple fact in American physical geography — their position at the head and foot of a system of water communication; the indented coast of New England should suggest how thrifty little sea-ports came to be established there; the relation of the Vosges Mountains to the Alps is a guide to the successive migrations of nations across Europe. From the beginning, the teacher should attempt to connect physical geography with the present political condition of the world; and, in like manner, the study of political geography should constantly bring in the physical features.

The second geographical method consists in putting before pupils for constant use wall-maps and historical atlases. So little is this necessity understood that in no other civilized country are good and cheap maps so rare; and our school atlases are notoriously inferior to those of France and Germany. In the use of maps, good or bad, there is an opportunity for the use of judgment; a mere reference to a place on a map on which the surface shows no physical relief does little to impress its position. For instance, the important geographical fact about the city of Rome is not that it lay in Latium, rather than in Etruria, but that it could control the trade of the Tiber valley, and, at the same time, was so far inland as to be free from attacks of pirates. The reason for its growth once learned, the site will never be forgotten. An excellent system in class is for a pupil to follow the recitation, pointing out on the wall-map the places as they are mentioned by the reciter.

A third and very efficient method of geographical training is the use of outline maps. "We buy outlines," says a teacher, "and strive

to set forth upon them as many subjects as lend themselves to such modes of representation. I should be at loss, without them, to make attractive the geography of Greece with its multitude of new names so hard to the junior mind, the migrations, the different eras of colonization, etc. But with maps it becomes very pleasant work. Maps are also especially interesting in showing the development and decay of the Roman empire, and the rise and growth of modern nations. . . . In every recitation in history every child has an open atlas upon his desk, and not only are all the places carefully looked up, but the effects of physical environments are constantly noted." By outline maps is not here meant the exasperating system of skewering the boundaries of countries upon an artificial geometrical scaffolding; but the use of maps having printed upon them the simple outlines of the country, the pupil to insert important places in their proper relations. This system is not unreasonably expensive, and pupils should be taught to feel that maps thus made are not simply exercises to be thrown away, but that by preserving them they may bring together a little special geographical atlas of their own. Mere copying from larger maps is an exercise without discipline, and is of no aid to the memory; in order to get the advantage of the geographical study each child must make up his map from a variety of sources. Map making thus becomes a kind of topical work, but a sort in which most children find a peculiar delight and stimulus.

VII. Summary.

In conclusion, your Conference begs to recapitulate a few of the points in the above report which we wish especially to emphasize. We believe that the subjects upon which we have reported ought to receive at least as much attention as they now receive in the best and most carefully taught schools, and considerably more than in the present average schools. A part of the time necessary for this change can be had by bringing the study of English and of geography into closer relations with the study of history. We strongly urge that the historical course be continuous from year to year, and in this respect be placed upon the same footing as other substantial subjects. We urge a closer co-ordination of the work in civil government and political economy with that in history. We especially recommend such a choice of subjects as will give pupils in the grammar schools an opportunity to study the history of other countries, and to the high schools one year's study on the intensive method.

As to methods, we have to suggest only the use of the methods which, in good schools, are now accustoming pupils to think for them-

selves, to put together their own materials, to state their results, to compare one series of events with another series and the history of one country with that of another.

Finally, we urge that only teachers who have had adequate special training shall be employed to teach these important subjects.

Respectfully submitted,

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APPENDIX.

ANSWERS TO THE QUESTIONS OF THE COMMITTEE OF TEN.

Specific answers to the nine questions may be found by referring to the report and accompanying resolutions as follows:

1. In the school course of study extending approximately from the age of six years to eighteen years — a course including the periods of both elementary and secondary instruction — at what age should the study which is the subject of the Conference be first introduced?

At about nine or ten years: *Resolutions* 13, 14; *Report*, § 6.

2. After it is introduced, how many hours a week for how many years should be devoted to it?

Not less than three exercises per week during eight years; or, under special circumstances, during six years: *Resolutions* 14–17; *Report*, §§ 7–9.

3. How many hours a week for how many years should be devoted to it during the last four years of the complete course; that is, during the ordinary high school period?

Three hours per week during four years of the high school course; or, in special circumstances, three years: *Resolutions* 14–16; *Report*, §§ 8–10.

4. What topics, or parts, of the subject may reasonably be covered during the whole course?

This question is answered in the proposed curriculum: *Resolutions* 2–10, 14, 16; *Report*, §§ 10, 16–19.

5. What topics, or parts, of the subject may best be reserved for the last four years?

The opinion of the Conference is shown by the curriculum proposed: *Resolutions* 13, 14, 16, 28–30; *Report*, §§ 12–19.

6. In what form and to what extent should the subject enter into college requirements for admission? Such questions as the sufficiency of translations at sight as a test of knowledge of a language, or the superiority of a laboratory examination in a scientific subject to a written examination on a text-book, are intended to be suggested under this head by the phrase "in what form?"

Methods of college examinations are suggested in *Resolutions* 32, 33; *Report*, §§ 20, 21.

7. Should the subject be treated differently for pupils who are going to college, for those who are going to a scientific school, and for those who, presumably, are going to neither?

We are unanimously against making such a distinction: *Resolution* 31; *Report*, §§ 2, 11.

8. At what age should this differentiation begin, if any be recommended?

There should be no differentiation: *Resolution* 31; *Report*, §§ 2, 11.

9. Can any description be given of the best method of teaching this subject throughout the school course?

The subject is discussed in *Resolutions* 18–30; *Report*, §§ 23–35. The essentials are: trained teachers; good text-books; suggestive recitations; outside reading; written work, especially in connection with English composition; topical study; suitable illustrative material; and historical geography intelligently taught.

10. Can any description be given of the best mode of testing attainments in this subject at college admission examinations?

A recommendation of examination questions requiring thought and the acceptance of satisfactory written work as a part of the evidence of preparation appears in *Resolutions* 32, 33; *Report*, §§ 20, 21.

11. For those cases in which colleges and universities permit a division of the admission examination into a preliminary and a final examination, separated by at least a year, can the best limit between the preliminary and the final examinations be approximately defined?

The Conference suggests that history be reserved for the final examinations: *Resolution* 34; *Report*, § 22.

GEOGRAPHY.

PRESIDENT CHARLES W. ELIOT, CHAIRMAN OF COMMITTEE OF TEN, NATIONAL EDUCATIONAL ASSOCIATION:—

Dear Sir,—The members of the Conference on geography (embracing geology and meteorology) appointed by your committee, held sessions on December 28th, 29th and 30th, at the Cook County Normal School, as designated by you, and gave careful consideration to the questions submitted to them. They beg leave to submit the following report:—

RELATIONS OF THE SUBJECT.

It was found difficult to define strictly the scope of geography on account of its intimate relations with, and gradations into, geological, meteorological, zoölogical, botanical, historical, political, and other sciences. Geography is an important factor in all these, and they in turn enter as factors into a comprehensive study of it. It is impossible to draw any sharp divisional lines, and the Conference have found it practicable to indicate in a limited degree only, by suggestions, how far these several associated subjects should be brought into the study of geography, as such, and how far, on the other hand, the geographical element in each of these should be left to be taught in connection with them, as separate sciences. While it did not seem to the Conference advisable to greatly modify the range of subjects usually embraced under the term geography, they recommend a more distinct recognition of its different phases and some modifications of treatment for the purpose of giving these greater emphasis and more advantageous relations to other work, as indicated below.

FORMAL DIVISIONS AND DISTRIBUTION OF THE SUBJECT.

General Elementary Geography. There are important reasons for devoting the work of the earlier and intermediate years to those features of geography which will be most serviceable to the majority of pupils without regard to any sharp classification, because these are the only years during which many pupils remain in school. The earlier courses should, therefore, treat broadly of the earth and its environment and inhabitants. The instruction should extend freely into fields which are recognized as belonging to separate sciences in later years of study. It should deal not only with the face of the earth but with elementary considerations in astronomy, meteorology, zoölogy, botany, history, commerce, governments, races, religions,

etc., so far as these are connected with geography. Unless this admixture of subjects is included under the elementary courses of geography many scholars will not gain a knowledge of even the outlines of these important subjects.

Applied Geography. But when this common groundwork is laid, there is a distinct advantage in a gradual differentiation of the subject. Some of its phases may be best disconnected from the formal study of geography and taken up in connection with the subjects to which they are most intimately related. For example, the geographical element in history is best understood, appreciated, and retained in memory when taken in connection with historical study. The distribution of plants and animals will only have its fullest meaning when studied in connection with the nature of the plants and animals themselves; that is, as a phase of botany or zoölogy.

Unfortunately our works in botany and zoölogy are very defective in this respect. The Conference would urge that this serious fault be remedied.

In general, all forms of applied geography are most advantageously taken in connection with their applications, provided that a general knowledge of elementary geography has been previously acquired, as indicated above.

Physical Geography and Physiography. On the other hand, the special subject of geography should take on a more advanced form and should relate more specifically to the features of the earth's surface, the agencies that produce and destroy them, the environing conditions under which these act, and the physical influences by which man and all the creatures of the earth are so profoundly affected. This has usually been designated physical geography. There is an advanced and modernized phase of it, however, which the majority of the committee prefer to designate physiography, not because the name is important, but because it emphasizes a special and important phase of the subject and of its treatment. The scientific investigations of the last decade have made very important additions to physiographic knowledge and methods of study. These are indeed so radical as to be properly regarded, perhaps, as revolutionary. Unfortunately they are not yet incorporated in textbooks, in any large degree, nor are they, even in scientific treatises, collected into a form readily available for the use of the teacher. As yet they are widely scattered through various scientific publications. But this condition will doubtless be improved at an early date. Meanwhile, it is thought best that physical geography should be taught, by the aid of the best elementary textbooks now available, as the last geographic course previous to the high school, and that there should be introduced into the high-

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In general, all forms of applied geography are most advantageously taken in connection with their applications, provided that a general knowledge of elementary geography has been previously acquired, as indicated above.

Physical Geography and Physiography. On the other hand, the special subject of geography should take on a more advanced form and should relate more specifically to the features of the earth's surface, the agencies that produce and destroy them, the environing conditions under which these act, and the physical influences by which man and all the creatures of the earth are so profoundly affected. This has usually been designated physical geography. There is an advanced and modernized phase of it, however, which the majority of the committee prefer to designate physiography, not because the name is important, but because it emphasizes a special and important phase of the subject and of its treatment. The scientific investigations of the last decade have made very important additions to physiographic knowledge and methods of study. These are indeed so radical as to be properly regarded, perhaps, as revolutionary. Unfortunately they are not yet incorporated in textbooks, in any large degree, nor are they, even in scientific treatises, collected into a form readily available for the use of the teacher. As yet they are widely scattered through various scientific publications. But this condition will doubtless be improved at an early date. Meanwhile, it is thought best that physical geography should be taught, by the aid of the best elementary textbooks now available, as the last geographic course previous to the high school, and that there should be introduced into the high-

school course either physiography, geology, or meteorology as the representative of the geographic line of studies, which may be broadly characterized as that which relates to the physical environment of man. Possibly more than one of these may be practicable in some high schools, when alternative or elective studies are offered.

As this line of study develops into better form and expression, physical geography will probably come to signify a stage of differentiation and a method of treatment intermediate between that of common geography and that of physiography, and the latter will represent that more advanced treatment which belongs to the higher courses. But without regard to what may be the terminology of the future (which is not very important in itself), the majority of the Conference wish to impress upon the attention of teachers the fact that there has been developed within the past decade a new and most important phase of the subject, and to urge that they hasten to acquaint themselves with it and bring it into the work of the schoolroom and of the field.

The ground to be covered by physiography, when introduced as a high school study, may be indicated by the following topics:[1] The wasting of the land surfaces, the transportation of the waste to the sea, and its deposition on the marginal sea bottoms; a brief account of the more common minerals and rocks in their relation to wasting; the changes of river action during the progress of land denudation; the relations of lakes, waterfalls, divides and their migration, flood-plains, deltas, etc., to the stage of river-development in which they are observed; the development of shore lines and the variation of their features under the long continued action of the shore waves; the interruptions of the normal progress of denudation and shore action by depression, elevation, or deformation; and by volcanic action or by climatic change, including briefly the effects of glacial action. The various kinds of land forms, as plains, plateaus, mountains, volcanoes, should be considered in accordance with the constructional processes involved in their origin and with the system of development above outlined; and their distribution over the earth should be briefly sketched. The better known land areas, and especially our home country, should be described in accordance with the development of the various geographical elements of which they are constituted. No attempt should be made to describe the whole world in this way, because the subject is too large for high-school treatment; but the conviction that all land areas are constituted of geographical elements in various stages of development should be

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enforced by frequent mention of examples of different kinds in various parts of the world. Sufficient account of climate should be given to introduce an intelligent consideration of the conditions that determine the distribution of life; but this should be made relatively subordinate to the main theme, namely, the geography of the lands.

The associated study of the oceans should be relatively brief. It should give a condensed account of the ocean basins, recognizing the deep continuous basins of the great oceans, the enclosed mediterraneans, and the continental shelves; of the conditions of the ocean bottoms; of the composition and deep currents of the sea, and of the tides. The relation of these conditions to the distribution of oceanic life may be briefly introduced.

Unless an additional course on meteorology is offered, a sufficient practical use of the weather maps should be introduced into the course of physiography to furnish the scholars with a knowledge of the general principles of weather changes and forecasts.

Meteorology. Since the establishment of the national Weather Bureau, meteorology has not only been greatly advanced as a systematic science, but it has become a subject of wide popular interest. This, together with its importance as a factor of geography, moves the committee to recommend that meteorology be introduced as an elective study for half a year in the third or fourth year of the high-school course, when practicable. Elementary physics should precede it. It should be opened by local observations of the passing weather changes, accompanied by a study of a series of daily weather maps, and the application of physical principles to explain the general phenomena of the atmosphere should follow. Local observations should be carried further in this course than they extended in earlier years, especially regarding the sequence of phenomena in the atmosphere and the correlation of various weather elements. The study of weather maps, already familiar objects from the less systematic study of earlier years, should now reach to the clear understanding and description of the distribution of temperature and pressure, flow of the winds, and occurrence of clear, cloudy, rainy or snowy areas; and to a careful induction of generalizations by which various phenomena are connected; for example, the correlation of the direction and velocity of the winds with the value of the barometric gradient; or of areas of high or low pressure with the spiral outflowing or inflowing winds and the areas of clear or cloudy and rainy sky. The effect of the progression of these areas of high and low pressure on local weather changes and their value in weather prediction should be made clear; practical exercises should be given in this connection, as *will be more fully explained in* a later section. During the advance

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of local observation and study of the weather maps, instruction should be given on the more general relations of the science, in which the following headings are the most important: Composition and offices of the atmosphere; arrangement of the atmosphere around the earth under the action of gravity; the nature of solar energy and its distribution over the earth and through the year; the different action of solar energy on air, land, and water; the mean annual and seasonal distribution of temperature over the earth; the processes of local and general convection; evaporation, humidity, clouds, rainfall; the distribution of atmospheric pressure, and the general circulation of the atmosphere, as modified by the annual march of the sun north and south, and by the influences of the continents; storms, both cyclonic and local; weather changes and their prediction; climate, zones, and their relation to habitation. .

Geology. So soon as it shall be practicable to introduce an effective course in modern physiography into the high school, it will probably not be advisable to give a course in geology also, except in special cases where the teacher is unusually well prepared to teach the subject and the locality affords special advantages. At present, however, the material and the methods of geology are better known to teachers than those of either physiography (in the modern sense) or meteorology, and its literature is in better form for school use. Until, therefore, physiography and meteorology are developed into good working forms and teachers are adequately trained in them, the Conference recommend that geology be offered as an elective study for a half year in the last year of the high school. Unless either physiography or geology is retained in the high school and given vitality and efficiency, a serious danger threatens the whole geographic line of study in the lower schools, for the great mass of teachers of geography have not taken courses beyond the high schools, and in the immediate future are not likely to go farther with their education, and if they are not taught the elementary processes and principles of these sciences there, they will have little real strength as teachers of geography. They cannot go much beyond mere facts and formalities. The high school must teach those things that are necessary to give efficiency to teaching in the lower grades or that teaching will suffer, for, great as is the work of the normal schools (and it should be greatly increased and its value urged by every influence at command) they cannot supply the great mass of teachers for the primary, intermediate, and grammar schools. Temporarily, therefore, the Conference recommend that geology be offered as an elective, in the hope that soon physiography and meteorology may take its place, leaving it to be transferred to normal schools and colleges.

As there must be a selection of topics, the committee recommend that the nature of the processes involved in the formation and modification of the earth's surface, essentially as indicated under the head of physiography, be regarded as having the most vital importance both to the general student and the prospective teacher. Practical instruction in the field on surface forms, on the formation and natural occurrence of rocks, and on fossils should form a part of the work. Especial attention should be given to an intelligent interpretation of the textbook, which is liable to be meaningless to the scholars without it, however well it may be written. This can be done best by local illustrations, carefully examined by the class, for the purpose of giving typical conceptions and by the study of cabinet specimens. The result of the course should be as apparent in an increased appreciation of the facts of geology as exhibited in the neighborhood of the school, as in a knowledge of the general truths of the science of world-wide application.

If, however, schools are not prepared to treat the subject with real intelligence and effectiveness, it is better not to offer it at all.

The natural order of geographic subjects seems, therefore, to be the following:

1. *Elementary Geography*, a broad treatment of the earth and its inhabitants and institutions, to be pursued in the primary, intermediate, and lower grammar grades.

2. *Physical Geography*, a more special but still broad treatment of the physical features of the earth, atmosphere and ocean, and of the forms of life and their physical relations, to be pursued in later grammar grades.

3. *Physiography*, a more advanced treatment of our physical environment in which the agencies and processes involved, the origin, development, and decadence of the forms presented, and the significance of the features of the earth's face are the leading themes, to be pursued in the later high-school or early college years.

4. *Meteorology*, a specialized study of atmospheric phenomena, to be offered by schools that are prepared to do so properly, as an elective in the later high-school years.

5. *Geology*, a study of the earth's structure and its past history, to be offered by schools prepared to do so properly, as an elective in the last year of the high-school course.

The precise distribution of these divisions of the subject through the several grades of our schools can best be left to the judgment and discretion of those who have immediate charge of them, for their best

distribution depends, in a large degree, upon the preparation and ability of the teachers, the character of the school, the advancement and intelligence of the community (which greatly aids or retards the work of scholars) the local geographic surroundings, and the facilities for advantageous study both within and without the school. Each step should be satisfactorily taken before the next is attempted. A rigid system which forces a class over a given ground in a given time without regard to their ability to cover it properly will not be helpful to the best results. In general, however, it is the judgment of the Conference that too much time is given to the subject *in proportion to to the results secured.* It is not their judgment that more time is given to the subject than it merits, but that either more should be accomplished or less time taken to attain it. In general, they believe the progress of the work is too slow, and that it will be both more interesting to the scholars and more successfully done if pushed with greater vigor. The work should move on earnestly and at a pace that makes the progress obvious to the scholars. Interest lags when the advance is too slow. Dawdling and dwelling on trivialities are among the great mistakes of the schoolroom. They are especially vicious when mistaken for thoroughness. The committee believe that the real acquisitions of pupils may be increased twofold, or threefold, or fourfold, by right methods and by earnest judicious pressing of the work, and hence, that the time given to geography may be somewhat shortened and yet higher attainments secured, and that a portion of the time thus saved, may be devoted to natural and human history, wherein, if they are properly treated, the geographic factor will be brought into its natural place and functions, and the pupils taught that most important of lessons, the utilization of their geographic knowledge. The Conference regard the subject of geography of equal importance with arithmetic in the primary and secondary schools, and entitled to equal time, but they think that a like remark concerning greater results in less time is applicable to the mathematical work.

Order of Treatment Based on Mental Processes.

The foregoing suggestions relate to the succession of the formal divisions of the geographic line of studies and bear rather upon the arrangement of the school curriculum than upon the treatment of the topics involved. These formal divisions are based largely upon practical considerations and natural relationships, and take little account of the intellectual processes involved and their proper sequences. These latter, however, are the chief considerations in the mind of the conscientious and intelligent teacher, for they control the specific treatment of the subjects embraced in the study and

determine the habits of thought, and the modes of the work of the pupils. The teacher, therefore, needs for his own use (not to give his pupils nor to put in the curriculum) a more analytical view of the subject based on the intellectual processes involved, a view which may be an ever-present guide in the arrangement of details and the treatment of the special points of the subject. The Conference offer, by way of suggestion, the following scheme. The appended remarks bear in part upon the educational philosophy entertained, in part upon the purpose of the work, and part upon the methods of execution. Reduced to a sentence the scheme is: first, see; next, reproduce; then study the productions of others, and, meanwhile, ponder and reason on all.

1. *Observational Geography.* In the judgment of the Conference, observation should go before all other forms of geographical study and prepare the way for them; its object being (1) to develop the power and habit of geographic observation, (2) to give the pupils true and vivid basal ideas, and (3) to arouse a spirit of inquiry and a thirst for geographical knowledge. This work of observation should begin with those features that lie immediately about the pupils and so fall easily within the reach of their direct study and ready comprehension. In rural districts, the natural features of the surface will obviously form a large part of the study, while in cities, the artificial features must largely take the place of these. In the one instance, natural geography, as seen in the forms of the land, the hills, valleys, plains, meadows, divides, streams, lakes, etc., will predominate, while in the other artificial or humanistic geography will receive leading attention, as streets, railways, wharves, harbors, parks, plots, wards, etc.; but something of both these groups of subjects may be found and utilized in both localities. Neither should be neglected, for the pupils need not only to acquire clear ideas of the things by which they are chiefly surrounded but type ideas of the things which characterize other localities and of which they need to form correct ideas without being able to see them. Observation, however, should not be confined simply to the passive fixed features by which pupils are surrounded. They should observe the agencies that produce surface changes, such as winds, rains, floods, thawing, freezing, cultivation, etc. The temporary streams that follow heavy rains represent on a small scale many of the natural processes by which surface features are produced. From these immediate agencies, the observations should extend to the phenomena of the weather and the climate, such as temperature, winds, clouds, seasons, etc. As a step toward the understanding of mathematical geography, so-called, the children should be led to observe the shifting of the sun north and south with

the seasons and to measure the amount of this by the length of shadows at noonday in the different months of the year. They should compare these by means of a record kept for the purpose. In like manner, they should observe the movements of the stars and other heavenly bodies. As a step toward the study of the distribution of plants and animals and an insight into their dependence upon temperature, soil, food, etc., the pupils should be encouraged to observe the differences of plants on uplands, lowlands, marshes, etc., and upon sandy, clayey, gravelly or stony ground, and to note the habitual dispersal of animals and insects in the neighborhood, and also their relations to each other, as in forming or frequenting forests, prairies, meadows, etc. As a step toward the study of the human elements in geography, observations should be made upon the population and its distribution, upon home occupations and productions, upon local political boundaries, as wards, school districts, city or town limits, etc., and upon the location of cities, villages, railways, canals, etc. Thus, by a little ingenuity and industry, a large part of the features that make up the substance of geography in the large sense may be found illustrated close at home, and, if suitably studied, the basis may be laid for clear conceptions of those features which lie beyond the range of the child's observation.

Observation should not only begin the work in geography but should continue throughout the entire course and beyond. If scholars are not educated so as to continually observe geographic features and note their significance whenever they are brought in contact with them, whether during school days or afterwards, the school work fails of its most important possibilities. The pupils' first observational work is necessarily of the simpler and more superficial kind. As knowledge and insight increase, they should see more and more of the geographic phenomena that come before them and see deeper and deeper into their significance and receive increasing pleasure and profit from them. To this end, every opportunity for observational work in geography should be eagerly embraced. Excursions for the special purpose should be made as frequently as practicable, formally or informally, in school hours and out of school hours, by classes and by individuals. Advantage should be taken of incidental excursions in which the class or any of its members participate. The little trips and longer travels of members of the class should be taken advantage of. Late in the course, special studies of certain geographic features may be taken up with success and profit.

2. *Representative Geography.* Immediately after the making of observations should come their reproduction in the form of descriptions, sketches, maps, models, etc. The instruction of the teacher

falls far short of its highest efficiency if the early work is merely observational and receptive. The great end of education is to create productive ability. One important form of this is representative production. Besides having value in itself, the description of features that have been seen and their representation by sketches, maps, or models reacts upon the observational work and induces a clearness, sharpness, and definiteness that it would not otherwise be likely to take. Not only this, but it leads the scholars to realize what maps, descriptions, etc., really mean. By this means, pupils are lead up naturally to an ability to read with vividness, ease, and full understanding, the maps and descriptions which constitute the medium of the larger part of their later studies, and such ability to read is of supreme importance in all subsequent work.

3. *Derivative or Descriptive Geography.* When pupils have gained true and vivid basal ideas by observation and have, by reproducing these, acquired a realistic sense of the meaning of maps and an ability to read them, in the full and proper sense of the term, they are prepared to pass on to a formal study of descriptive geography. In this, the observational and representative work of others than themselves is made the basis of study. The pupils are not now studying the earth's surface but "a description of the earth's surface." The work is not direct and immediate, but derivative and secondary. The pupils cannot carry their own observations over more than a very small fraction of the earth's surface and their work upon even this small portion must, in the nature of the case, be very imperfect. Their great dependence must, therefore, be upon the work of others, the work of geographical experts, and hence descriptive geography must embrace much the largest portion of their attention. The common mistake is that it embraces too nearly all of it, and the observational and reproductive efforts which are necessary to give the study of descriptions its greatest serviceability are neglected. These should be continued throughout the course running parallel with the descriptive study and supplementing and vivifying it.

4. *Rational Geography.* It has already been urged that the pupils should be induced to observe changes and processes as well as the simple passive facts of geography, and that there should thereby be laid the foundation for an understanding of the origin, the development, and the future history of geographic features. This is the introduction of rational geography, as distinguished from the mere noting and memorizing of facts. This phase of the subject which leads the pupils into the reason of things, should be assiduously cultivated, for it is the soul of the science. It should, however, be carefully adapted *to the capabilities* of the pupils, particularly in the

earlier stages of the study. They should not be forced beyond their capacity to comprehend the nature of the agencies that have rendered geography what it is. On the other hand, there is an equal danger of underestimating the capacities of pupils to see into the reasons for natural operations. It is as dangerous to allow their capacities to lie undeveloped as it is to overload them with reasonings they cannot understand, and to force them to carry these in a mere verbal form by an effort of memory. The reasonings should be such as they can follow understandingly, if not work out themselves. If they merely commit them to memory, they are as dead as other things simply memorized and lose entirely the rational element. It may not be wholly without value in some cases to give to children a statement of the causes of phenomena even though they are unable to understand the methods of their operation, but it should be clearly understood that this is not teaching the scholars to reason concerning phenomena, or even to follow reasonings concerning phenomena, but merely to memorize the reasons of phenomena.

It is not recommended that rational geography be disassociated from observational and descriptive geography, but rather, on the contrary, that it be intimately connected with these and that it be introduced so as to give them life and significance. To do this, skill and discretion must be used respecting the way in which the rational element is introduced and the extent to which it is carried.

Treatment in Relation to Mental Discipline.

It is an advantage to the teacher to carry the analysis and classification of the work in geography a step further in the direction of its psychological effects so as to make the point of view more exclusively and definitely the mental powers to be exercised and developed. But this should be understood as having reference solely to the teacher's aid and guidance in the arrangement and conduct of the work, and not as a formal division of the subject nor as a matter to be taught pupils. Clear and definite views of the cultural purposes of the work cannot be too strongly urged upon the teacher. Such views will not only be a guide to the proper method of treatment of the subject but will be constantly suggestive of the difficulties the scholars encounter, of the defects of their modes of thinking, and of the ways and means of obviating these. While various activities of the mind are called into exercise in geographical work, the committee would advise that the systematic development of three classes of these should largely control the arrangement of the work, viz., (1) the powers of observation, (2) the powers of scientific imagination, and (3) the powers of reasoning. The cultivation of the powers of observation is necessary

to furnish clear, accurate, and realistic fundamental ideas and modes of thought. These, in turn, are necessary as a ground work for the training of the scientific imagination, for clear images are not likely to be formed of things not seen unless clear impressions are formed of things seen. The image-producing power is the only means by which the larger part of the matter of geography can be presented to the mind, and no effort should be spared to give it strength and vividness. Both clearness of observation and strength of imagination are essential as a basis for safe reasoning; for recourse must be had to both for the ground-work upon which reasoning proceeds.

Much that falls under this head has been implied in the foregoing discussion but, at the risk of some repetition, the following classes of topics are cited as suggesting the means of cultivating advantageously these powers. The first class may seem too obvious and familiar to need naming, even in outline, but the second is not so generally recognized as calling into exercise the imagination. The definite concrete recognition by the teacher of the necessary function of the imagination in the study of these topics and the specific application of methods suited to the development of clear and strong powers of image-production in the scholars is important to best results.

A. Under the head of resources for the culture of the observational powers will obviously fall (1) study of surface forms, such as hills, valleys, plains, plateaus, streams, lakes, shores, and all similar phenomena within the pupils' horizon. These may be approached, as already indicated, by observations on miniature forms of like nature, such as may be found in gutters, gullies, ravines, brooklets, ponds, "bottoms," etc.; (2) observations on the temperature and its relations to the direction of the sun's rays, the apparent motion of the heavenly bodies, as their circling round the poles, the rising and setting of some stars and not of others, the shifting north and south of the sun, moon, etc.; (3) movements of the atmosphere and their effects, rain and its effects, snow and its effects, fogs, clouds, etc.; (4) plant life and its dependence on heat, moisture, sunlight, etc.; the influence of soil, slope, etc.; (5) observations on animal life, of similar nature; (6) observations on man in the family, in educational, church, social, and business organizations, in city and town organizations, and so on up towards the larger human organizations and the forms of government. So also, observations on city and town plots with their street systems, railways, canals, harbors, their wards, school districts, etc.

B. Under work involving the culture of the imagination will fall the formation of concepts of all the larger features of geography and of all features beyond the range of observation; as (1) the river

basins, the great relief systems, the continental divisions and subdivisions, the ocean bottoms, the distribution of land and water, and, in a less pronounced way, the picturing of all geographical features not actually observed; (2) modifications of apparent motions due to imagined changes of position of the observer on the earth's surface, such as the position at the pole, on the equator, on the different parallels, etc.; (3) distribution of the meteorological agencies over the globe, as moisture, winds, climate; the mental picturing of the great wind movements, the cyclonic circulation, the zones, etc.; (4) distribution of plant life developed in the form of a mental picture in its relations to the earth's surface, to land and water, to altitude and climatic conditions, as distinguished from a mere memorizing of the facts of distribution without any such pictorial conception; (5) distribution of animal life in like manner; (6) distribution of races of men, forms of government, national territory, etc.

C. Both of the foregoing lists of topics furnish the ground-work for the culture of the reasoning powers if the question of causes and agencies is raised in connection with them. Why do the several features take the forms they do? By what agencies were they caused, and why did these agencies work in such ways? How did these forms originate? What are the causes of the winds, the clouds, the changes of temperature? Why are the animals and plants distributed as they are? Why were these cities located as they are? Why are these large and those small? Why do these railways take this course rather than another? And so on.

The Conference do not advise the disassociation of these processes for the specific development of these mental powers from each other in the practice of the schoolroom, but they do urge that teachers clearly recognize them as they are involved in their work and fully appreciate their importance. They should definitely associate the topics they are endeavoring to teach with the mental powers they bring into exercise, so that there shall be ever present in the mind as an object of endeavor not only the mastery of the subject-matter but the acquisition of improved mental powers.

This is not matter to be put before pupils, as they are not presumed to be studying psychology. Its value lies in its guidance of the teacher's conduct of the work.

Methods of Presentation.

In the discussion of the previous topics, we have necessarily touched upon some of the most vital considerations that bear upon methods of teaching. This is especially true of those that relate to the order of arrangement of the work, the methods of approach to

the different phases of the subject, and the mental powers to be cultivated. But in addition to these more general and fundamental suggestions there are considerations that relate to modes of presentation and appliances for illustrative instruction that require attention. The suggestions of the Conference must necessarily be incomplete, and, at the outset, they wish to disclaim any intention of limiting, even by suggestion, the modes of teaching to the methods here briefly outlined. The Conference hold it to be of first importance that every teacher should become so familiar with the subject as to be able freely to depart from any proposed method according as the special conditions of the school shall indicate. At the same time, the Conference feel that the following outlines of the manner in which different parts of the subject may be laid before a class may prove serviceable. Their effort is to suggest briefly and definitely certain modes of treatment of the various parts of the subject, believing that teachers can infer from these the manner in which other parts of the subject may be developed.

Preliminary Suggestions. Inasmuch as all success in teaching depends largely on the ability, training, and opportunities of the teacher, several rather miscellaneous recommendations are introduced, at the outset, relative to the organization and equipment of the school and the training of the teacher.

We urge that, in the selection of new teachers, only those be appointed who, by observation and by practice in recording and reproducing their work, have acquired a sufficient knowledge and skill to be able to carry out themselves the observations, recordings, mappings, and modellings that are expected of their scholars. We also recommend that familiarity with the modern aspects of physiography be made a requirement of all special teachers of geography, as soon as practicable.

We strongly urge that self-improvement be stimulated by special meetings of geographical teachers wherever these can be organized, and that the resources of the schools and of accessible libraries be utilized as fully as possible in the presentation and discussion by the teachers themselves, at these meetings, of various special problems connected with this specific line of work.

We recommend that schools be supplied (1) with large-scale maps of their own district and their own state; (2) with the best obtainable series of general maps, prepared as far as possible on uniform scales; the style of projection and the scale being indicated on each map; (3) with a sufficient number of small globes to enable every scholar, sufficiently advanced, to study the globe individually, at one hour or another, during the day, just as a book might be studied; (4)

with illustrations of various kinds as liberally as possible, including photographs, lantern slides, and means of projection; (5) if possible, with a few models (whose scales should not be unreasonably exaggerated) representing the home district, if these can be obtained, or, if not, at least with typical models of some interesting regions of our own country; (6) with books of reference on history, travels, natural history, etc., involving geographical elements and suitable for the use of both scholars and teachers, and in increasing numbers year by year; (7) with a selected series of topographical maps for use in schools (see note below). In order that the expense incurred in procuring all these materials should not be too heavy, at any one time, it is suggested that it be divided and distributed over several years, rather than that the supply of materials be neglected. In many cases, the assistance of generous patrons of public schools may be enlisted to this end.

We recommend that each teacher keep a book of record, in addition to any records kept by scholars, and that in this the more general and important results of class work be set down for future reference; thus accumulating a fund of original information, largely the product of the scholars' own activities, which will be serviceable to them, later in their studies, and to their successors.

We urge that at all stages and in all parts of the study of geography the teacher, rather than the textbook, should lead the class. A good textbook is necessary to furnish maps and other material of study, to secure conciseness of definition, and to save time in study, after a proper introduction to its texts has been given by the teacher, and a good textbook should give a better presentation of the subject than teachers can usually be expected to command. So also, recitations based on textbooks are indispensable in order to secure precision of understanding and of statement on the part of the scholars. But every stage of the subject should be naturally introduced and illustrated by the teacher, and the textbook should be kept

NOTE.—Regarding a series of topographical maps for use in high schools, the Conference voted that the chairman should appoint a committee whose duty it should be to select from topographical maps of the United States Geological Survey such a series as shall best illustrate the principal topographical forms of our country, and also to select from the charts of the Coast and Lake Surveys a series which shall best illustrate the principal features of our shore lines; and that high schools be urged to purchase these series of maps, together with the topographic maps of the district in which the school is located, if such have been made. When this committee reports, it is probable that the list of maps which it selects will be published, together with the prices at which they can be obtained. Professors William M. Davis, Charles F. King, and George L. Collie were appointed as such committee.

determine the habits of thought, and the modes of the work of the pupils. The teacher, therefore, needs for his own use (not to give his pupils nor to put in the curriculum) a more analytical view of the subject based on the intellectual processes involved, a view which may be an ever-present guide in the arrangement of details and the treatment of the special points of the subject. The Conference offer, by way of suggestion, the following scheme. The appended remarks bear in part upon the educational philosophy entertained, in part upon the purpose of the work, and part upon the methods of execution. Reduced to a sentence the scheme is: first, see; next, reproduce; then study the productions of others, and, meanwhile, ponder and reason on all.

1. *Observational Geography.* In the judgment of the Conference, observation should go before all other forms of geographical study and prepare the way for them; its object being (1) to develop the power and habit of geographic observation, (2) to give the pupils true and vivid basal ideas, and (3) to arouse a spirit of inquiry and a thirst for geographical knowledge. This work of observation should begin with those features that lie immediately about the pupils and so fall easily within the reach of their direct study and ready comprehension. In rural districts, the natural features of the surface will obviously form a large part of the study, while in cities, the artificial features must largely take the place of these. In the one instance, natural geography, as seen in the forms of the land, the hills, valleys, plains, meadows, divides, streams, lakes, etc., will predominate, while in the other artificial or humanistic geography will receive leading attention, as streets, railways, wharves, harbors, parks, plots, wards, etc.; but something of both these groups of subjects may be found and utilized in both localities. Neither should be neglected, for the pupils need not only to acquire clear ideas of the things by which they are chiefly surrounded but type ideas of the things which characterize other localities and of which they need to form correct ideas without being able to see them. Observation, however, should not be confined simply to the passive fixed features by which pupils are surrounded. They should observe the agencies that produce surface changes, such as winds, rains, floods, thawing, freezing, cultivation, etc. The temporary streams that follow heavy rains represent on a small scale many of the natural processes by which surface features are produced. From these immediate agencies, the observations should extend to the phenomena of the weather and the climate, such as temperature, winds, clouds, seasons, etc. As a step toward the understanding of mathematical geography, so-called, the children should be led to observe the shifting of the sun north and south with

gained by a study of the assigned lesson as a point of departure for the purpose of leading on to additional facts and causes and results, for making comparisons, and for stimulating fresh thought upon the subject, instead of going over the subject solely to test the pupils' memory and faithfulness. As an illustration, the class having learned what they can about the Mississippi River, instead of spending half an hour asking pupils in turn the length of the river, where it rises, between what states it flows, and into what body of water it empties, the teacher and the class may take an imaginary ride from the Falls of St. Anthony down the river, and develop the facts connected with its course and their applications in a graphic and realistic way from the imaginary deck of a steamer.

We urge upon teachers the free use of the crayon and blackboard. The simplest illustrations are of the greatest help, as, for instance, sketches of mountains, lakes, bays, etc., a few lines to show the comparative size of mountains, fanciful shapes of countries, sketch maps of countries, or parts of a country, localities of coal, silver, gold, or copper fields, simple sketches of plant and animal life, belts of forests and deserts, etc. The outlines of a country painted upon a cloth blackboard, in oil, form an invaluable and inexpensive piece of apparatus which can be used by the teacher while imparting information, and by the pupil in recitation.

Charts, which can be readily made upon manilla paper with the rubber pen, are of great assistance in preserving illustrations for use from year to year.

The descriptive matter which is generally given in regular geographical textbooks is too condensed and often too dryly stated to awaken the highest interest in children in the intermediate and grammar grades. The matter given in most works of travel and in geographical readers is better adapted to the understanding and appreciation of young pupils. In most of these books, the personal element interests the young minds and awakens their closest attention. Within a few years "geographical supplementary reading" has been provided in such abundance that every teacher has large opportunities of selection in this line of reading, and the free use of this is recommended.

Methods in the Lowest Grades. While the simpler facts of a geographical nature cannot be introduced too early in a child's education, it is not recommended that the formal study of geography as a separate subject, however elementary, be undertaken in the lowest grades. But the habit of observation should be stimulated as soon as the child enters the school and its development constantly encouraged. The plan of the schoolhouse and schoolyard and the

geographical surroundings of the school furnish immediate opportunities for this work of observation in the geographical line. The power of verbal expression, which should receive attention at the outset, and facility in writing and reading, which comes later, are developed most naturally in connection with subjects that lie within the observation of the child, and many of these are geographical. Narratives involving travel and descriptions of foreign countries and peoples may be included as properly in the reading matter of the school as they are in the stories which children delight to hear at home. Inasmuch as the first years of the school work are, for the most part, years of preparation for the work to follow, it is of the utmost importance that good intellectual habits be formed. Correct observation and accurate statement of simple facts, concentration of thought on simple subjects which easily absorb the attention, and precise memory of matters which readily remain in the mind are modes by which, through the aid of geographical surroundings, good basal habits of mental action may be developed.

The meaning of a map can be gradually developed in the minds of pupils in the third and fourth grade by having the children, with some help from the teacher, first draw a simple plan of the schoolroom, marking the places of the doors, windows, and the teacher's desk; then add, on the same scale, the pupils' desks, and then other fixed objects. After this has been done, a sketch map of the school yard and the streets, or roads, in the vicinity may be made. The teacher may first draw on the blackboard while the pupils draw on paper, adding line after line, and naming each as it is drawn. When the sketch is finished, let a pupil point out on it how he would go from the school to his home and tell the points of interest or importance passed on the way. In this way, lines begin to have a representative value in the mind of the child. From the map of the home locality, the teacher may proceed to the making of a map of the country, state, and grand division, always emphasizing the meaning of each line used. If the teacher can show pictures of places never seen by the class, as a valley through which a river flows, and will then make maps of the same, it will help the pupils to understand maps still better.

The class may then be taught to read or interpret maps of different kinds, to explain the use of color, of shading, of parallels, of scale, etc. The meaning of scale can be impressed upon the young child by the teacher by first drawing a map in a rectangle divided into square inches whose sides represent, for instance, just 1000 miles. Then draw the same map in a smaller rectangle and ask the children questions in reference to the squares, length of lines, etc.

After children understand the significance of color on physical maps, their attention can be called to the use of other means of representing the same facts, as by shading, hachures, and contour lines.

Mapping as a means for the reproduction and graphic illustration of facts learned, and to aid the memory, is of the greatest importance. When the outlines are only a groundwork for the plotting of the significant matter, time may be saved by procuring these already printed, or manifolded by some of the many cheap methods now in use. These can then be filled in with lines and words to represent the points under study as elevations, drainage, productions, exports, commerce, etc. The filling in may be done gradually at the end of each lesson, thus forming what may be appropriately called a "progressive map."

Methods in the Intermediate and Grammar Grades. As the work advances to the formal study of geography, every new branch of the subject should be naturally introduced by easy transition from what has gone before or from some new quality of local observation. No new step should be taken until the class is clearly ready to take it. The art of the teacher should be so exercised that the class is lead towards the next division of the subject before the preceding one is passed, and, if possible, questions should be elicited from the brighter scholars whose answers will anticipate the subject next to be considered. The intelligence of the children will be an important element in determining the progress of study. Great care should be taken to develop the use of local opportunities in such order as will best open the more advanced parts of the subject. A varying emphasis must be given to different subjects according to the need of the class.

The greatest care should be given to secure clearness of ideas. For this reason, we recommend again that observational study should form the beginning of every new division of the subject, if it can be done, and that the exercise of the imagination of remote objects should always be preceded, if possible, by the exercise of the observation of similar facts near at home. The expert teacher will nearly everywhere find that the variety of available material increases as practice in this method is continued.

In view of what has already been said under previous heads, we do not feel that it is necessary to enter further into detail as to methods of teaching common geography or the common phases of physical geography, especially as they are somewhat fully set forth in available treatises, but in view of the new factors in physiography and meteorology, we have entered into a somewhat full sketch of methods *of treatment of those* subjects.

Methods in Physiography. Inasmuch as meteorology is considered under a separate heading, and as oceanography can seldom receive close attention, we shall here confine ourselves to a consideration of the physiography of the land.

The method adopted in teaching this subject in the high school should be such as to bring out clearly its leading educational values: first, the understanding that it gives of the forms of the land at home and abroad as dependent on the stage of advance of various processes; second, the practice that it requires in the conception of the many variable and interacting agencies on which the forms of the land depend.

In order to secure the successful application and illustration of the principles of physiography in the home district, we advise that the teacher of this subject should, if possible, have had some outdoor experience in geological field work, as it is only through such experience that local illustrations can be utilized to the fullest advantage and a sufficiently practical turn can be given to the study.

To reach the best results, we advise that the following classes of materials be supplied as liberally and utilized as fully as possible:

Maps: Not only the physical maps of the larger land divisions, already introduced in more elementary teaching; but also special maps of restricted areas on large scale, illustrative of typical land forms, such as it is the intention of the Conference to select and recommend for use, through its sub-committee, as referred to on page 135: the object gained by these large scale maps being the actual representation of the actual forms of the land, instead of the mere indication of the locality where certain forms occur, as is the case with the use of small-scale maps.

Illustrations: Not so much of different places, as of different kinds of places; the effort being to present a systematic series of the different classes of land forms. These may be secured in part from illustrated newspapers and magazines; still better in photographs and lantern slides; some form of lantern for projection being essential to the attainment of the best results. The collection of illustrations should be gradually extended and improved from year to year. The use of colored chalks on the blackboard may be made very effective in representing maps, sections, ideal diagrams, birds-eye views, etc.

Models: While elaborate models and relief-maps are too expensive for general use, effective reliefs of diagrammatic style are less costly and should be introduced. Diagrammatic models should be made by the teacher; for it is fair to expect that the skill manifested by young scholars in making their sand and clay reliefs should be far enough developed *in the teacher of physiography* to produce original models

of typical land-forms in their physical relations. When made with some attention to artistic finish such models are of great assistance in teaching.

Books: Use should be made as far as possible of the descriptions of classic examples of land-forms in books of travel, survey reports, and scientific periodicals, such as are generally accessible in the libraries of the larger cities. A collection of extracts from these sources, made by the assistance of the scholars, may be gradually accumulated in such variety as to be of much service.

Other Materials: A collection of common minerals and rocks should be made use of in describing the constitution of the crust of the earth on which the carving of the destructive forces of the weather produces the land-forms on which we live. Care should be taken not to extend this collection unnecessarily and to exclude from it all misrepresentative specimens. The weathering of rocks and the production of soils should be illustrated by a special suite of specimens, selected from the school district, if possible. Characteristic varieties of glacial drift deserve especial attention in the northern states. Weather maps should be secured from the nearest publishing station of the Weather Bureau, carefully preserved from year to year, until examples of different weather types are obtained in sufficient variety; the treatment of these maps having been explained in other sections of this report.

In offering the following suggestions regarding the conduct of the course in physiography, we repeat the caution already expressed regarding the intention of such suggestions. It is not in the least our purpose to constrain any teacher from the greatest individual freedom in his work; indeed the higher success that we desire to see can be reached only when the teacher is free to apply his own manner of representation, explanation, and illustration. Yet we conceive that the following indications of the manner in which the subject may be presented will be of service to some superintendents and teachers in making our measure of the subject and its educational value more explicit. For the sake of brevity we shall consider only that part of the subject that is concerned with the development of land-forms.

The general conception of the wasting of a land area and the ultimate production of a lowland of denudation from whatever form the area had in its earlier stages, deserves early and deliberate illustration. Around this fundamental conception, the teacher may group a variety of facts, both local and general, concerning the rocks and their structural relations in the earth's crust, on the one hand, and the weather and its summation in climate, on the other hand. However hard its rocks, however dry the climate, a lowland of faint relief is

the ultimate form of every land area under the slow wasting of its surface; and during all the progress of this wasting, a systematic sequence of forms is exhibited. The essential elements in the study are thus introduced early and in their simplest form; the slow but continuous variation of land forms under these processes; the long duration of time that must be considered, even if not conceived. Every part of the land surface represents some stage in the course of its progress from its beginning in constructional uplifting or accumulation, towards its end as a completed lowland of denudation. Every part of the district around the school must be regarded in its true light as partly advanced on its way to extinction under the ceaseless attack of the weather.

The particular consideration of rivers, under whose guidance the waste of the land is carried to the sea, may be advisably introduced as the next general heading; because, from whatever constructional processes of accumulation or uplift a region had its beginning, there are certain general features of river-life common to all regions, and these may be conveniently presented before the different structural kinds of land forms are taken up. This serves not only to impress upon the scholars the systematic sequence of form-changes during the progress of general denudation, but also to emphasize the many features of the land that are associated with the development of its drainage. Throughout this division of the subject, particular care should be taken to bring the class into sympathy with the subject, by forgetting for the moment human measures of time and looking at rivers in the way rivers would look at themselves. Thus are examined the conditions that determine the original drainage area of a river, the location of its enclosing divides, and the arrangement of tributary branches; then the quick deepening of its valleys and the drainage of any lakes in which its waters may be at first detained; and, at the same time, the development of additional young side-streams, the accompanying subdivision of the drainage area, and, occasionally, the rearrangement of discharge by the shifting of divides under the action of active competing streams; with the rapid deepening of the valleys comes at first the development and later the extinction of the water falls; with the widening of the valleys comes the slow spreading out of land-waste in floodplains where the mature streams meander, and in deltas, where the streams branch out in "distributaries." Late in river-life, when the inter-stream hills are wasted away, the old streams wander sluggishly almost at will along ill-defined courses, slowly doing the little that remains for the completion of their life-work. During the advance of this consideration, specific examples may be given of rivers in one or

another stage of development from various parts of the world, thus utilizing the maps and illustrations above described. The relation of the development of a river to the opportunity for occupation of its basin, or use of its current by man, supplies many interesting subjects for detaining the attention and extending the understanding of the class.

The river-lesson may be extremely valuable in giving life and meaning to the commonplace facts of geography; and especially in bringing the class into appreciative relation with such rivers and streams as they may see about their homes. A comparison of these home examples with others more distant but in similar stages of development, or a contrast with others in dissimilar stages of development, offers an admirable means of acquainting scholars with the general facts of geography. The citation of many illustrations of river development impresses scholars with the reality of the changes of land forms, and with the systematic sequence or these changes. The face of the earth thus comes to have a new aspect, and a long step is made toward that intimate acquaintance with the life of inorganic nature which this subject strives to promote.

After gaining an understanding of changes in the life of an undisturbed river, the effects of elevation, depression, or deformation of the land, or of climatic changes may be introduced. With their introduction, an important step is taken toward the more complicated conditions of nature; at the same time, the subject becomes somewhat more difficult from the necessity of maintaining a greater number of factors in mind while interpreting the relations of rivers having more or less disturbed development. Yet with a deliberate and well-illustrated approach to this division of the subject, it should present no serious difficulty to high-school classes.

The consideration of regions of different structure, and hence of different surface expression, advisably follows the preceding account of river development. While the general arrangement and form of valleys has there been explained, the form of the hills, plateaus, ridges and mountains between the valleys now becomes the leading object. The explanations of geological structure here required will present no difficulty, if the teacher has a personal knowledge of such subjects from field experience; but otherwise it is doubtful if this plan of treatment can be usefully introduced into the high-school course. In illustration of what is here intended, we may briefly refer to the group of plains and plateaus, characterized by possessing a horizontally stratified structure. These may be first considered according to the condition of their accumulation; as marine plains, lacustrine plains, fluviatile plains, lava plains, snow plains, and

dust plains. Second, according to the manner in which those formed under water have become exposed as dry land; as by upheaval from beneath the sea, by down-cutting of lake outlets, by evaporation of lake waters in arid climates, by melting away of the ice barriers of glacial lakes. Third, according to the expression of surface form as dependent on complication of structure, altitude above sea-level, stage of development, condition of climate. Fourth, according to the distribution of plains and plateaus of different kinds; thus we find a young marine plain in Florida, an old marine plain, much dissected, in West Virginia; a young lacustrine plain in Minnesota and Dakota, an older lacustrine plain in the Green River Basin of Wyoming; a young lava plain in the Snake River Basin of Idaho, an older lava plain in West Scotland, and so on. Mountains should receive similar treatment. Features of glacial origin deserve especial attention in the northern states. Experience shows that when the subdivisions of the land are thus rationally explained, their peculiarities are much more easily remembered, and their relations to habitation and productions are much more fully appreciated. Just as in botany and zoölogy, where no attempt is made to describe all the forms of plants and animals and their distribution over the earth, but where the scholar is shown the more important forms, with their correlations, as determined, not by apparent similarity, but by development; so in physiography, it is not advisable to attempt an account of all parts of the earth, when only the slightest attention could be allotted to each; it is better to give careful attention to the more significant parts, and to study these in their natural relations, introducing a sufficient number of examples to give a good idea of the distribution of various forms, and of their relation to habitation and production. By these means, a better idea is gained of the features of the earth's surface, and the scholars are enabled afterwards to recognize and enjoy the expression of the face of nature when they are moving about over the world in later life.

Methods of Teaching Meteorology. (*a*) *Intermediate or Grammar School Course.* The simplest facts concerning the weather may be introduced into observational studies as early as the teacher desires. These should be followed by simple instrumental records in the fourth or fifth year, never so complex or frequent as to be burdensome, so that when the sixth and seventh year of school is reached, the scholar will have gained an elementary but practical and familiar acquaintance with the use of the thermometer, the wind vane, and the rain-gauge. The barometer and hygrometer should be introduced, if possible, but not so early as the simpler instruments. Habits of punctuality, care, neatness, and system may be taught by keeping a record, and excellent

arithmetical practice may be given in determining averages and totals; but the teacher should take care that the scholars' attention be directed to the phenomena of atmospheric changes, as well as to their intrumental records.

Accompanying the local observation of weather elements, a simple study of weather maps should be introduced; but this should progress very slowly, in order that the best value may be derived from it. The following suggestions may be of service in this connection. Assuming that the school can receive a supply of daily weather maps for at least a part of the school year, and that it has access to maps received in earlier years: let the teacher select several of the older maps on which the winds over the country east of the Rocky Mountains happened to be moving in a systematic manner, for example, a great volume of southerly winds moving northward from the Gulf up the Mississippi Valley and inland from the South Atlantic Coast, while westerly winds are advancing across the great plains; or a broad sweep of westerly or northwesterly winds spreading all over the eastern half of the country, as during a cold wave. Draw the wind arrows in heavy black lines, for easier seeing; such work as this may often be entrusted to advantage to some of the better draftsmen among the scholars. In order to enforce the idea that the whole lower part of the atmosphere is moving, and not simply the winds at certain stations of observation, draw many intermediate lines, accordant with the directions of the wind arrows; the length, or heaviness, of these lines may be made to indicate the velocity of the winds. A series of charts may thus be prepared with little trouble, from which an effective presentation of some of the greater facts of meteorology can be easily and clearly made. These maps may be used as the basis of exercises in writing; the description of their wind movements deserves careful statement. When the spiral winds about areas of high pressure and of low pressure are included in the series, the scholars will find all their powers of verbal description called on to enable them to state the facts properly. The continued use of the maps will also serve to impress many geographical facts on the memory.

Areas of cloud and rainfall may be treated in a similar way; and their contrast with adjacent areas of fair or clear sky afford much material for study and description. The presence of clear weather in one region, while heavy rains are falling in another, is thus taught in a simple and effective manner.

The distribution of temperature should be introduced, first, by entering the thermometer readings at the various stations on the map in strong figures, so that a class may easily see them; and then

geographical surroundings of the school furnish immediate opportunities for this work of observation in the geographical line. The power of verbal expression, which should receive attention at the outset, and facility in writing and reading, which comes later, are developed most naturally in connection with subjects that lie within the observation of the child, and many of these are geographical. Narratives involving travel and descriptions of foreign countries and peoples may be included as properly in the reading matter of the school as they are in the stories which children delight to hear at home. Inasmuch as the first years of the school work are, for the most part, years of preparation for the work to follow, it is of the utmost importance that good intellectual habits be formed. Correct observation and accurate statement of simple facts, concentration of thought on simple subjects which easily absorb the attention, and precise memory of matters which readily remain in the mind are modes by which, through the aid of geographical surroundings, good basal habits of mental action may be developed.

The meaning of a map can be gradually developed in the minds of pupils in the third and fourth grade by having the children, with some help from the teacher, first draw a simple plan of the schoolroom, marking the places of the doors, windows, and the teacher's desk; then add, on the same scale, the pupils' desks, and then other fixed objects. After this has been done, a sketch map of the school yard and the streets, or roads, in the vicinity may be made. The teacher may first draw on the blackboard while the pupils draw on paper, adding line after line, and naming each as it is drawn. When the sketch is finished, let a pupil point out on it how he would go from the school to his home and tell the points of interest or importance passed on the way. In this way, lines begin to have a representative value in the mind of the child. From the map of the home locality, the teacher may proceed to the making of a map of the country, state, and grand division, always emphasizing the meaning of each line used. If the teacher can show pictures of places never seen by the class, as a valley through which a river flows, and will then make maps of the same, it will help the pupils to understand maps still better.

The class may then be taught to read or interpret maps of different kinds, to explain the use of color, of shading, of parallels, of scale, etc. The meaning of scale can be impressed upon the young child by the teacher by first drawing a map in a rectangle divided into square inches whose sides represent, for instance, just 1000 miles. Then draw the same map in a smaller rectangle and ask the children questions in reference to the squares, length of lines, etc.

are persuaded that the error is commonly made, in schools where weather maps are used, of going too fast under the lead of the teacher's brief explanations, perhaps because the teachers themselves are not yet familiar enough with the great lessons that the maps may give; thus not only passing over many matters with insufficient understanding by the scholars, but also preventing the practice in discovery which here develops so great an interest among children when they are in a properly awakened state, and which gives well-trained scholars so strong an encouragement in their studies. The teacher should supply maps in a proper order, he should guide the advance of the class by judicious questions; but he should leave them to find out the simple meteorological laws, such as those which associate the movement of the winds with the distribution of atmospheric pressure; the variation of temperature with the direction of the winds, etc. In this way, the following principles may be established: The winds flow towards the regions of lower pressures, but they generally turn a little to the right of the lines of pressure-decrease, that is, to the right of barometric gradient. The winds blow faster when the pressure decreases rapidly, and calms or light breezes prevail where the pressure is comparatively equable. The winds blow in left-handed curving spirals in areas of low pressure, and in right-handed outward spirals in areas of high pressure, and they are generally stronger in the former than in the latter. Southerly winds cause a rise of temperature; northerly winds cause a fall of temperature. Areas of low pressure are generally cloudy, with rain in summer, and with rain or snow in winter; areas of high pressure are prevailingly clear with warm days and cool nights in summer, and with cold weather and extremely cold nights in winter. These areas move in a general eastward course over the country, carrying their changes of wind and weather with them, in such a manner that the stationary observer suffers changes from clear to cloudy weather, and from warm southerly to cool northerly or westerly winds as they pass. Thunderstorms of summer time generally occur in the southeastern quadrant of low pressure areas.

During the advance of this work, current weather maps may be introduced to give exercise on the problems in hand, whenever they serve the purpose well. A connection may thus be made between the local weather noted at the school and the general atmospheric conditions over the country; and a passing rainstorm, or a strong change of temperature, may be thus traced with great interest and profit. All through the work, continual practice should be maintained in formulating and writing the conclusions reached by study. As

the study advances, these written records become, in effect, so many compact generalizations in which the scholars' inductions are preserved. The training of mental powers and the encouragement given to persevering and intelligent study are not among the least of the results gained from work of this kind.

Without going further through an account of elementary exercises, based on the weather map and illustrated by local weather observations, we may add a few examples of subjects that may be borrowed from meteorology for the aid of descriptive geography. The prevalence of westerly winds and the general advance of areas of high and low pressure from west to east may be mentioned as one of the strongest characteristics of the middle temperate zone; and in contrast, the oblique northeast and southeast trade winds, blowing steadily, with few stormy interruptions, may be instanced as a prevailing characteristic of the torrid zone. The greater intensity of weather changes may be pointed out as a feature of winter, when we experience something of frigid conditions; the less intensity of weather change is a feature of summer, when we are visited by almost torrid heat. The general increase of rain or snow within areas of low pressure, as they approach the Atlantic Coast, may be used to explain the aridity of our western interior region, and of other continental interiors. The smaller variations of temperature near the coast, and particularly on the Pacific Coast, than in the upper Mississippi Valley, may be employed to teach one of the greatest climatic contrasts of the world.

(*b*) *High School Course.* The course in meteorology in the high school should be directed quite as much towards a training in the methods of logical investigation, as towards imparting information concerning the science. It should not be attempted until after a course in physics is passed. For the sake of brevity, only the shortest outline of the work can be introduced.

Facts of local observation about the school and of extended observation through the weather maps bring almost continuous but variable movements of the atmosphere before the class. The correlations discovered from the weather maps in the grammar school, now reviewed, show a clear connection between the movement of the winds and a variety of the other weather elements. Let it therefore be suggested that the cause of the winds be the main line of study, leaving the associated phenomena to be examined and explained in their natural connection with the winds.

Recalling the teaching of physics, it appears that no cause for atmospheric movement is so available as convection, that is, a gravitative circulatory movement, excited by differences of temperature.

Under assumed conditions as to temperature, the resulting distribution of atmospheric pressure and flow of the winds may be deduced in accordance with accepted physical principles, and this process may be at once contrasted with the inductive process by which the correlations of the weather maps were established. It may be then stated that if the distribution of temperature over the earth were known, the general circulation of the winds and the distribution of pressure could be predicted, and, according to the closeness of agreement afterwards found between these predictions and the facts, the theory of the convectional cause of the winds would be accepted or rejected, thus introducing the class to a rational method of scientific investigation, applicable in all manner of studies, as well as in meteorology.

On perceiving the direction thus given to further inquiry, the study of the control and distribution of atmospheric temperature is naturally taken up, because it is manifestly needed before further advance can be made. Under this division of the subject the teacher is advised to make clear the distinction between radiant solar energy, which traverses the celestial spaces in all directions from the sun, and of which a very small part reaches the earth, and the heat produced when this energy is acquired or absorbed by terrestrial matter. Interesting illustrations of physical processes are found in this connection; the different rates of absorption of radiant energy by air, water, and land, the control of temperatnrc by specific heat, latent heat, dynamic cooling of ascending air currents, etc., etc.

The distribution of temperature on annual and seasonal isothermal charts may next be studied, noting the prevailingly high and uniform temperatures of the torrid zone, the variable temperature of the temperate zone, and the prevailingly low temperatures of the frigid zones; noting also the small variations of temperature from season to season on the oceans, even in relatively high latitudes, while the lands of the temperate zone have extremely variable temperatures.

In accordance with the theory of convectional circulation, it is now possible to predict the distribution of pressure and the flow of the winds, on the assumption that they are entirely the product of differences of temperature maintained by the sun. The predictions should be carefully formulated and entered on a blank map of the world. A series of annual and seasonal charts of pressures and winds should then be compared with the predicted consequences of the theory. It will be apparent that the theory is incomplete, because there are many differences between its predicted consequences and the facts; but all these differences are explained when adequate account is taken of the effect of the earth's rotation in deflecting the

the ultimate form of every land area under the slow wasting of its surface; and during all the progress of this wasting, a systematic sequence of forms is exhibited. The essential elements in the study are thus introduced early and in their simplest form; the slow but continuous variation of land forms under these processes; the long duration of time that must be considered, even if not conceived. Every part of the land surface represents some stage in the course of its progress from its beginning in constructional uplifting or accumulation, towards its end as a completed lowland of denudation. Every part of the district around the school must be regarded in its true light as partly advanced on its way to extinction under the ceaseless attack of the weather.

The particular consideration of rivers, under whose guidance the waste of the land is carried to the sea, may be advisably introduced as the next general heading; because, from whatever constructional processes of accumulation or uplift a region had its beginning, there are certain general features of river-life common to all regions, and these may be conveniently presented before the different structural kinds of land forms are taken up. This serves not only to impress upon the scholars the systematic sequence of form-changes during the progress of general denudation, but also to emphasize the many features of the land that are associated with the development of its drainage. Throughout this division of the subject, particular care should be taken to bring the class into sympathy with the subject, by forgetting for the moment human measures of time and looking at rivers in the way rivers would look at themselves. Thus are examined the conditions that determine the original drainage area of a river, the location of its enclosing divides, and the arrangement of tributary branches; then the quick deepening of its valleys and the drainage of any lakes in which its waters may be at first detained; and, at the same time, the development of additional young side-streams, the accompanying subdivision of the drainage area, and, occasionally, the rearrangement of discharge by the shifting of divides under the action of active competing streams; with the rapid deepening of the valleys comes at first the development and later the extinction of the water falls; with the widening of the valleys comes the slow spreading out of land-waste in floodplains where the mature streams meander, and in deltas, where the streams branch out in "distributaries." Late in river-life, when the inter-stream hills are wasted away, the old streams wander sluggishly almost at will along ill-defined courses, slowly doing the little that remains for the completion of their life-work. During the advance of this consideration, specific examples may be given of rivers in one or

leading to the conclusions, and not simply the conclusions, should receive careful consideration.

The cyclones and anticyclones of our latitudes are found of great importance not only in explaining the changes of weather — as has already been made familiar from earlier study — but also in the determination of the occurrence of local thunderstorms and tornadoes; for these are determined for the most part by instability produced by the importation of warm and cold currents about the areas of low and high pressure.

The distribution of rainfall is best introduced after the explanation of winds and storms, both general and local. It may be used in confirmation of the explanations already given of the winds — the migrating equatorial rains of the doldrums; the dry belts of the trade winds, except where they blow against mountains, the stormy rains of the westerly winds in temperate and higher latitudes; the subtropical winter rains — all these follow as corollaries of the movements already recognized.

A general review of the subject may be made under the heading of climate, where the various phenomena hitherto studied separately may now be grouped geographically, and considered especially with regard to their influence on the development of organic life, and on the habitation of various regions by man.

Examinations for Admission to College.

The Conference adopted the following expressions of judgment as to the terms of admission to colleges: —

In view of the fact that our high schools, in fulfilment of their obligations to the majority of their pupils, must shape their work so as to give the best available preparation for the average duties of life without regard to college study;

And that most high schools cannot maintain several distinct courses without weakening all, in greater or less degree, by undue division of instruction and equipment;

And that it is desirable that all pupils who have finished a high-school course of the better order should be able to enter college without serious embarrassment from lack of adjustment, even if they shall come to desire to do so only at or near the end of their course in high schools, as is so often the case;

And in view of the fact, on the other hand, that it is desirable that college graduates, as prospective principals, teachers, and patrons of the high schools, should be familiar by personal experience with as much of the high-school course as practicable, rather than a special phase of it only, and so should be in working sympathy with it;

And that, for many additional reasons, it is desirable that there shall be the closest practicable relations between the colleges and high schools, therefore,

Resolved, that it is the sense of this Conference that the colleges should accept as preparatory work, in such due measure as a fair estimate of of their value shall permit, all studies which the high schools are compelled by their conditions to teach, and that, in arranging their requirements for admission, the colleges should make provision for a number of alternative subjects or adaptive studies sufficient to permit the high schools to subserve their primary functions and at the same time prepare their students for college without disadvantageous dispersion of effort;

Resolved, that physiography, geology, and meteorology should be given, in the terms of admission to college, values equal to the full extent of the work expended in their pursuit.

While urging the acceptance of physiography, geology, and meteorology for admission to college, the Conference do not urge that they should be required. In examinations for admission to college, the Conference suggest that physiography be given preference over other branches of geography, and that political geography be required in connection with history.

Concerning the class of questions most suitable for testing attainments, this being a subject submitted to the Conference, we suggest two criteria which should be met. The questions should be (1) such that no student who is not familiar with them can be supposed to have an adequate preparation, and (2) such that no student who has an adequate preparation can fail to exhibit it by means of them (time and other necessary conditions being granted). These criteria, we think, will be best met by the selection of broad but fundamental topics, rather than by narrow and special questions on which the student might fail although well trained on the subject in general. In attempting to treat the fundamental topics recommended the candidates will show the precise character of their command of the subject. If that is loose and superficial it will appear in their papers; if it is thorough and precise, that will appear; if it is a mere memorized knowledge of facts, that will be shown; if it is a keen analytical perception of causes, agencies, and processes, that will be indicated. When such topics are set, the candidates cannot either succeed or fail by the mere hazard of questions. Their opportunities are ample. And if the judgment on their papers rests, as it should, on the nature of the knowledge and training shown, and not simply on the fact that something has been written, a true estimate may be formed. "Catch questions" have no place in an examination for college. Among the

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topics that may be employed in such an examination, the following are selected as illustrations: Forms of projection used in maps; interpretation of topographic maps (as a part of the required work in physiography); the natural history of a river or a land area; the topography of a familiar district expressed by sketch maps and by an outline of the region and history of its topographic features; the significant features of one of the continents and of its drainage systems; the physical features of the United States; the character of ocean basins; the relation of the true continental border to the water line; the essential facts of the distribution of rainfall, of temperature, of atmospheric pressure, and of atmospheric circulation; the character and distribution of glaciers; the distribution of volcanoes, of deserts, and the significance of the latter; cyclones and anticyclones; the distribution of plants and animals.

It is with the deepest regret that the Conference are called upon to report the death of one of their number, Mr. Delwyn A. Hamlin, Master of the Rice Training School of Boston. Mr. Hamlin met with the Committee at Chicago, and was in full harmony with the general tenor of this report. His death, May 25th, occurred before the signatures were attached to the revised report.

Professor Edwin J. Houston dissents from some of the recommendations of this report.

All of which is respectfully submitted.

T. C. CHAMBERLIN, *University of Chicago, Chicago, Ill.*

GEORGE L. COLLIE, *Beloit College, Beloit, Wis.*

W. M. DAVIS, *Harvard University, Cambridge, Mass.*

*DELWYN A. HAMLIN, *Master of the Rice Training School, Boston, Mass.*

MARK W. HARRINGTON, *The Weather Bureau, Washington, D.C.*

CHARLES F. KING, *Dearborn School, Boston, Mass.*

FRANCIS W. PARKER, *Principal of the Cook County Normal School, Englewood, Ill.*

ISRAEL C. RUSSELL, *University of Michigan, Ann Arbor, Mich.*

*Deceased.

July, 1893.

To the Committee of Ten,

President Charles W. Eliot, *Chairman:* —

Dear Sir, — I sincerely regret my inability to agree with the Majority Report of the Conference on Geography (including Geology and Meteorology) appointed by your Committee to meet at the Cook County Normal School, Chicago, Illinois, on December 28th, 29th and 30th ult. I, therefore, respectfully beg leave to submit the following Minority Report, containing a brief statement of some of the respects in which I differ from the conclusions reached by the rest of the Conference as embodied in their Report.

I have before me two Majority Reports; the first, consisting of some fifteen pages of typewritten matter, fairly embodying the conclusions reached by the majority of the Conference during the conference; the second and later report, consisting of some forty-six pages of typewritten matter, containing suggestions afterwards made by the members individually. In my judgment the new and additional matter is so badly interwoven into the body of the Report, as to produce a lack of precision, which renders it difficult, in some respects, to ascertain exactly what conclusions have been reached by the gentlemen signing it. The recommendations of the two Reports, however, are essentially the same.

While the Majority Report contains much excellent material, I am, nevertheless, reluctantly compelled to differ from many of its fundamental conclusions and suggestions.

I agree with the statement in the Majority Report that "It did not seem advisable to greatly modify the range of subjects usually embraced under the term geography." Unfortunately, what I most strongly object to in the Report, is the fact that it greatly, and I think unwarrantably, modifies such range of subjects.

The Majority Report states "The natural order of geographical subjects seems, therefore, to be the following:

1. "*Elementary Geography*, a broad treatment of the earth and its inhabitants and institutions, to be pursued in the primary, intermediate and lower grammar grades."

2. "*Physical Geography*, a more special but still broad treatment of the physical features of the earth, atmosphere and ocean, and of the forms of life and their physical relations, to be pursued in the later grammar grades."

3. "*Physiography*, a more advanced treatment of our physical environment in which the agencies and processes involved, the origin, development, and decadence of the forms presented, and

the significance of the features of the earth's face are the leading themes, to be pursued in the later high-school or the early college years."

4. "*Meteorology*, a specialized study of atmospheric phenomena, to be offered by schools that are prepared to do so properly, as an elective in the later high-school years."

5. "*Geology*, a study of the earth's structure and its past history, to be offered by schools prepared to do so properly, as an elective in the last year of the high school course."

The proposed distribution of these subjects in point of time is as follows: viz., 1 and 2 are to extend through all the primary, intermediate and grammar grades; 3, 4, and 5 are either assigned to the later high-school course, or are to be elected during the last high-school or early college year.

The break thus introduced in the sequence of geographical studies is, in my judgment, exceedingly inadvisable. The advantages of the continued study of any subject are generally recognized by educators. If an intermission of several years in the geographic studies is permitted, between the grammar grades and the latter part of the high-school course, much time will necessarily be lost in again bringing the mind of the student to the point it reached when it temporarily abandoned these studies.

But, apart from this, the proposition to replace the general subject of physical geography in the high school by specialized branches of the science, appears to me to be one of the worst features of the Majority Report, and its adoption, I believe, would work an irreparable injury to the intelligent study of natural science not only in the schools, but also in the colleges and universities.

The peculiar fitness of physical geography for the presentation and classification of geographic facts is well known. Under its generalizations, the numerous, and, to the child, the often disconnected facts of geography fall into orderly groupings, and much that has hitherto perplexed and harassed its naturally inquisite mind, first finds intelligent explanation.

In my long experience as a teacher of natural science, I have found the study of physical geography always to attract, and often to charm the mind of the student. Moreover, physical geography forms the natural introduction to elementary natural science, since it treats of the causes and effects of the things that are constantly before the child's observation. Here is taught, or should be taught, the mutual interdependence of the three dead geographic forms, the land, the water and the air, and the two living forms, plant and animal life. The proposition to change all this for the doubtful and

untried advantages of a so-called new study is, I think, unwarranted and means retrogression and not progression.

A tendency unfortunately exists in educational circles to decry all that is old, and to laud and magnify all that is new. Such is the fruit of specialism, not of broad culture. The minds of the geologist and meteorologist, in my opinion, are too evident in the recommendations of the Majority Report. The advantages of the special departments of geology and meteorology have, I fear, been so magnified as to prevent the intelligent consideration of the remaining branches, the study of which is equally necessary for the broad culture of the child.

While I agree with the Majority Report that the work of the earlier and intermediate grades should deal "Not only with the face of the earth but with elementary considerations in astronomy, meteorology, zoölogy, and botany, etc.," I do not do so entirely for the reason assigned; namely, that "Unless this admixture of subjects is fairly included under the elementary courses of geography many scholars will not gain a knowledge of even the outlines of these important subjects," but mainly because I regard elementary geography as practically identical with elementary natural science, which I firmly believe should form as essential a part of primary education as either language or number. The child, in my judgment, should be taught the elementary facts of natural science along with its letters. The study of nature should form a large part of its first school work, if, indeed, not the only part.

That characteristic of childhood which finds expression in intense curiosity as to the why of the things it sees around it, and which leads it, when intelligent, to pour into the ears of its unwilling adult auditors, a deadly fusilade of questions that too frequently discloses their ignorance, can, if properly directed, be made in the study of elementary geography of considerable importance to early education. Children are close observers and possess the faculty of imagination to a degree much greater than is generally credited. Let then the first lessons of the child be limited to the things it can see and handle, and much will be done to ensure success.

I would recommend that in elementary geographical work, no text-books be permitted to be used; at least, no books such as those in general use, and that only those parts of the earth be studied where the child lives, and only those things on such parts with which the child is brought into actual contact, either in the house, along the streets or roads, on the playground, or in the school room. Such a study of geography will naturally prove of great benefit to the child, and will form the best method of ensuring interest in its studies,

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because it deals with objects that come within the range of its observation.

I entirely disagree with the Majority Report in the following statement regarding the time now devoted to the study of geography and the results of such work; viz.,

"In general, however, it is the judgment of the Conference that too much time is given to the subject *in proportion to the results secured.* It is not their judgment that more time is given to the subject than it merits, but that either more should be accomplished or less time taken to attain it."

In the first place I respectfully submit that the statement is no truer of geography than of any other study of the lower grades. Indeed, I doubt if it is as true of geography as it is of either number or language. The excellent work in geography that is now being done by a large proportion of the lower grades of schools, generally throughout the United States, will, I feel assured, in its results, compare favorably with those attained in either number or language.

For the general purposes of classification, the studies of the lowest schools may be conveniently arranged under the following general heads; viz., physical science, number and language.

I would introduce physical science in the lowest schools by the study of geography, which in its earliest stages should be strictly limited to observations of the simplest natural phenomena. As already remarked in its earliest stages, geography should be limited in place, to a description of that part of the earth where the child lives, and in subject matter, to those things which it sees, handles, and compares.

I would earnestly recommend that the child's first lessons in language be given through the medium of natural science thus introduced by elementary geography. I believe that a great advantage would be derived in so teaching a child language in connection with the studies in physical science. And this without that "Dawdling and dwelling on trivialities" which I agree with the Conference in unqualifiedly condemning. On the other hand, however, I would not urge undue pressing of the work, "In order that the time given to geography may be shortened." In all early school work it is best to make haste slowly.

But, apart from this, I do not believe that geography, as a branch of elementary natural science, can advantageously be crowded into fewer terms by devoting to it a greater number of hours per term. Whatever may be the advantages derived from such a plan in either number or language work, I do not believe that they exist in elementary

science work. Early scientific ideas to become well grounded should be of gradual growth. Like all ideas based on observation, time forms an important factor in their acquirement; time for the observations to be made; time for them to be thoroughly absorbed; time for them to be intelligently observed, and time for the correct conclusions to be reached. In mere memorizing studies, hurry may possess advantages, but in elementary scientific studies the time element is of prime importance.

It is not, however, in the lower grades only that the Committee express their belief that too much time is expended in teaching geography. They urge the same as regards the higher grades. It is indeed especially in the higher grades, in the study of physical geography, that they believe marked changes are necessary; and this, as I understand it, is a result of the experience or belief of at least a majority of the Conference, that not only the study of geography in general, but of physical geography in particular has failed to awaken the interest or arouse the enthusiasm of the pupils. An experience of nearly twenty years in teaching physical geography, I am happy to say, is directly at variance with this conclusion. On the contrary, I have invariably found this study to awaken the liveliest interest and not infrequently to arouse marked enthusiasm. Nor do I believe that the general experience of teachers in this respect would bear out the opinion expressed by the Majority Report. Should, however, the facts be as claimed in some localities, for I cannot credit such to be generally true, it would seem that this deplorable state of affairs is due to that very lack of definiteness and want of logical order of sequence, which I regret to believe characterizes both the matter and the recommendations of much of the Majority Report.

I would suggest the following topics as properly coming under the head of general geography; viz.,

1. Elementary geography, consisting entirely of the simplest facts of physical geography.
2. Descriptive geography.
3. Mathematical geography.
4. Political geography.
5. Physical geography, including a systematic classification and co-ordination of the more or less disconnected facts studied under heads 1, 2, 3, and 4, including the new facts that will necessarily present themselves as a result of such classification and coördination.

I would, as already stated, limit the early study of geography to the simplest elementary ideas of physical geography.

As the child advances in its observations of the earth immediately around it, the study of descriptive, mathematical, and political geography should begin; that is to say, after elementary natural geography has been sufficiently taught, the other branches of geography are to be studied together. In this respect I quite agree with the ideas advanced by the Majority Report. I feel convinced, however, that not only should geographical studies continue through all grades to the high school, but also that physical geography should be taken up during the first year or two of the high-school course, rather than during the last year. I believe this because I am convinced that the study of physical geography is necessary to properly generalize and systematize the heterogeneous collection of facts embraced under ordinary geography, and I believe that this should be done immediately at the close of such general geographical studies and not only along with them.

In the intermediate grades considerable attention should be given to maps and map drawing. In all cases, however, such studies should be preceded by ideas of relative size and direction. The meaning of parallels and meridians should be thoroughly taught before any extended work is attempted on maps. For this purpose the use of a spherical blackboard, or a large blackboard or blackened sphere so prepared as to be readily used with chalk is recommended. Smaller, individual, spherical blackboards can also be advantageously employed for individual use by the pupils.

I heartily agree with the Majority Report as regards the value of the repeated use of maps, and of the necessity for teaching the child how to interpret them intelligently.

As regards the presentation of physical geography I would suggest the following arrangement of topics, based mainly on Guyot's plan, as being, in my experience, an order of sequence that has invariably given good results.

1. The Inside of the Earth.
   The Heated Interior and its Effects.
2. The Outside of the Earth.
   - *a*. The Land.
   - *b*. The Water.
   - *c*. The Air.
   - *d*. Plants.
   - *e*. Animals, including Man.

In teaching these topics I would suggest the following order:

1. What is it? Definition.
2. Where is it? Distribution.
3. Why is it? Cause.

1. *What is it? Definition.* — In physical geography, as indeed in all studies, definite ideas must be had as to what the thing studied is. Clear and concise definitions should be given, the definitions, as far as possible, being vitalized either by the thing itself, or by a picture of the thing, if the thing itself cannot be readily obtained.

2. *Where is it? Distribution.* — Clear ideas of the distribution of the five geographic forms is a matter of prime importance in the study of physical geography, in order that the effects of each form on the other can be thoroughly understood.

It is under this second head that the knowledge of map drawing, already taught in the lower grades, can be applied as follows:

The student should be required to draw an outline map of the earth, preferably on a Mercator's projection, and to represent thereon, *as they are studied*, the distribution of the different classes of features or forms.

If the work under this second head be intelligently directed, most of the facts already acquired in the lower grades can now be grouped or arranged in a systematic form, and, when complemented by the third step, will be raised to the dignity of a science.

3. *Why is it? Cause.* — The study of the causes that have produced the present features of the earth, or are now modifying them, constitute an exceedingly important part of physical geography, and should be carefully insisted on; indeed, the effects of these causes should be taught throughout the entire course of geography, from the primary grades to the end. The extent, however, to which effects should be traced to their causes will of necessity vary with the work of the different grades. It is in this final study of the subject in the early high school years that the relations between causes and effects should receive their most extended treatment.

I agree with the Majority Report as regards the importance of the study of the causes that have produced and modified or are now modifying the physical features of the earth. I would not, however, limit the study of these causes in the high-school course to what the Report calls physiography, which is practically limited to the land areas, but would extend it equally to the ocean and atmosphere and to the life of the earth generally; for, if the study be thus limited to the land, and is not equally extended to the effects such changes in the land and water areas have on climate and especially upon plant and animal life, it loses much of its broad cultural value.

A study of physical geography based on the scheme I have outlined cannot, in my judgment, fail to possess great attractiveness to the student, and to prove an important factor in ensuring broad mental culture.

Whatever differences of opinion may exist as to the proper methods

of teaching geography in the primary grades, I think there should be no doubt as to the method best suited to the high-school grade. Here I would invariably begin each topic by a concise and accurate statement of the principles which modern science has discovered concerning it. If science is not agreed as to such principles, I would give the general consensus of opinion, carefully avoiding controversial matter, except in the highest grades of the work.

Having concisely stated the principles, I would show how such principles can be deduced from the observations already made by the student, either from the standpoint of work actually required in the lower grades, or, in the absence of this, from the observations it may reasonably be assumed the student has made for himself, outside of school work, pointing out how the interpretation of such observations necessarily leads to the scientific law already stated, supplying where necessary the missing links. In this manner the law as stated may be shown to be presumably correct. I think this preferable to any attempt to make the students deduce the law themselves. In other words, the scheme proposed would not attempt to build up the science by observations, but rather to make the observations confirm the already deduced law.

Moreover, in their recommendation to place additional subjects in the requirements for admission to college, the Conference go beyond the purpose for which they were appointed; viz., "To consider the proper limits . . . . the best method of instruction, the most desirable allotment of time for the subject, the best method of testing pupils' attainments therein . . . . of each principal subject which enters into the programme of secondary schools in the United States and into the requirements for admission to college." The Conference exceed their powers:

1. In proposing new studies for the secondary schools.
2. In naming subjects not required for admission to colleges.
3. In recommending the dropping of a subject now specially mentioned as one of the requirements for admission to many colleges.

Among the colleges that require physical geography in their entrance examinations I would mention the following: namely, the Sheffield School of Science, the Boston Polytechnic Institute, Princeton University, University of Kansas, Cornell College, Iowa, University of Wisconsin, Swarthmore College, University of Pennsylvania, University of Michigan, Cornell University, etc., etc.

The Majority Report is characterized by a curious and persistent insistance as to the peculiar claims of physiography, which it styles advanced and modernized physical geography.

I radically disagree with the recommendations of the Majority Report in this respect. It is not that I object so much to the use of the term physiography, since I agree with the Conference that names are of little importance, provided their significance is fully understood. To my mind, however, the word physiography is vague and misleading. Its meaning, as indicated by its etomology, is a drawing of nature, and this is the sense in which Huxley employed it to cover the subject matter of a certain course of lectures, on natural phenomena in general, and on the basin of the Thames in particular. Unless it is specifically stated as to what the natural drawing is, no precise meaning is conveyed by the word.

The meaning of physiographic as an adjective is more definite; for example, physiographic geology. But even here authorities are at variance. Dana limits the scope of physiographic geology "To a general survey of the earth's surface features." Clearly, however, such a limitation is not intended by the Majority Report, which would include dynamical geology. The Majority Report would make physiography include not only a survey of the earth's present features, but also an account of the agencies or forces that have produced or are now producing or modifying such features. But this is what Prestwich calls physical geology, by which he means Physical and Stratigraphical Geology as distinguished from Paleantological Geology; the one deals with inorganic and the other with organic matter.

Geike defines physiographic geology as "That branch of geological inquiry which deals of the evolution of the existing contours of dry land," and this it would appear comes nearest to the meaning given to physiography by the Majority Report.

But it is primarily the study of geography and not geology that the Conference is considering, and, if a new term is needed, it would seem that physiographic geography would be indicated. The existence of the well-known term physical geography, in my opinion, renders the coining of the new word inadvisable.

The uncertainty surrounding the name physiography is recognized by the Century Dictionary, as is shown by the following definition; viz., "A word of rather variable meaning, but, as most generally used, nearly or quite the equivalent of physical geography."

Let us now look into the Majority Report as regards its recommendations for the high-school course.

Concisely these recommendations are that physical geography be dropped out of the high-school course, and be taken up in connection with elementary geography as now taught in the secondary and elementary grades.

It is proposed to replace physical geography by:

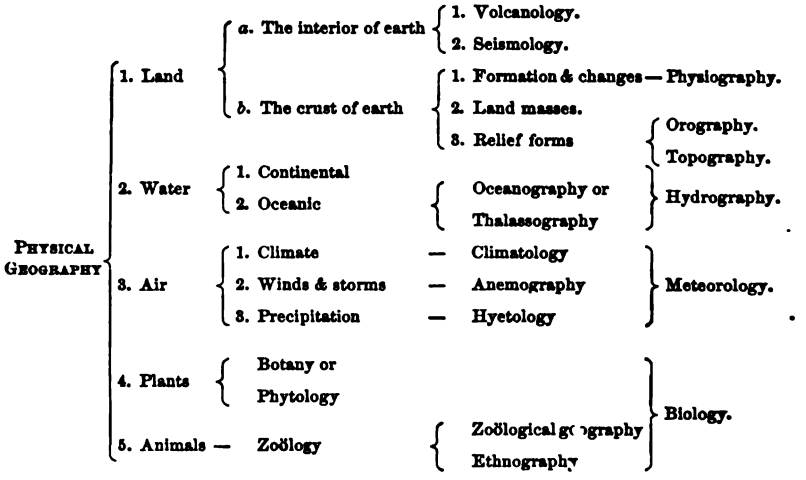
1. Physiography
2. Meteorology.

and, provisionally,

3. Geology.

In order to criticize intelligently this selection of topics proposed for the high-school course, a brief review of the topics included under the head of physical geography may be of value. Physical geography treats in general of the distribution, etc., of the land, water, air, plants and animals.

Tabulating the many branches of science which come under this very general heading, we have the following; viz.,



In place of the varied topics thus embraced under the term physical geography, portions from nearly all of which have already been necessarily introduced into the studies of the lower grades, we have the exceedingly limited range of topics embraced mainly under a subdivision of the land; viz., that relating to the formation and changes of the crust, or physiography.

It is true that the study of the water, as far as relates to the actions of rivers, lakes, glaciers, etc., is included among the causes of these changes, but their study is only incidental.

I have not included geology in the above tabular review, since, generally speaking, geology may be regarded as practically treating of the same topics as physical geography, with, however, this distinction; *i. e.* that geology is properly limited to a study of the earth as it was, and physical geography to the earth as it is.

That I am correct in my estimate of the limited scope of physiography, as the Majority Report understands it, will, I think, appear from the following extracts from the report itself;

On page 5, "But this would be made relatively subordinate to the main theme, namely, the geography of the lands."

Again on page 7, "As there must be a selection of topics, the Conference recommend that the nature of the processes involved in the formation and modification of the earth's surface, essentially so indicated under the head of physiography, be regarded as having the most vital importance, both to the general student and to the prospective teacher."

Or on page 8, "Physiography, a more advanced treatment of our physical environment, in which the agencies and processes involved, the origin, development, and decadence of the forms presented, and significance of the features of the earth's face, are the leading themes."

Or again on page 27, "We shall here confine ourselves to the physiography of the land."

And again on page 30, "For the sake of brevity, we shall consider only that part of the subject, that is concerned with the development of the land forms."

As far as I have been able to understand the so-called advanced and modernized physical geography, it is fairly crystallized in the following phrase, taken from page 30, of the Report:

"Its progress from first beginning in constructional uplifting, or accumulation, towards its end in a completed lowland of denudation."

I believe no further comment is necessary in this connection unless it be to review the very curious reason assigned for the introduction of physiography into the high-school course (see page 7):

"Unless either physiography or geology is retained in the high school and given vitality and efficiency, a serious danger threatens the whole geographic line of study in the lower schools, for the great mass of teachers of geography have not taken courses beyond the high schools, and in the immediate future are not likely to go further in their education, and if they are not taught the elementary processes and principles of these sciences then they will have little real strength as teachers of geography." The Conference have curiously confounded the functions of the high school with that of the normal school. Comment is unnecessary.

As regards the advisability of introducing meteorology into the high-school course in place of physical geography, the same general objections can be urged as in the case of physiography; viz., the replacing of a special for a general study.

It would in my judgment be bad enough if it were proposed to substitute the general subject of the atmosphere and its phenomena for the more extended subject of physical geography; but to propose a substitution of the highly specialized subject the Committee desire to make of meteorology, namely, the weather and its attendant phenomena, is, I feel sure, a great error, and one calculated to work much harm to that part of the school system on which the college and university depends so largely for its students.

I will not attempt here to point out the fact that the distribution of the topics proposed under meteorology is somewhat illogical as regards order of sequence and, therefore, not calculated to insure the best results; for, this is unnecessary, being secondary in consideration to the objection urged against the subject itself.

I agree with the recommendation of the Majority Report "That it is the sense of this Conference that colleges should accept as preparatory work, in such due measure as a fair estimate of their value shall permit, all studies which the high schools are compelled by their conditions to teach, and that, by arranging their requirements for admission, the colleges should make provision for a number of alternative subjects or adaptive studies sufficient to permit the high schools to subserve their primary functions, and at the same time prepare their students for college without disadvantageous dispersion of effort."

I do not, however, agree with them "That physiography, geology, and meteorology should be given in the terms of admission to college values equal to the full extent of the work expended in their pursuit;" for this, in my judgment, would be giving separate credits for, in many respects, two closely allied subjects; namely, physiography and geology.

Nor can I see any valid reason why so comparatively special a subject as that of physiography should be given any preference over any other special branches of geography.

I desire in this connection to call the attention of the Committee of Ten to the fact that for some reason which I am unable to comprehend, the Majority Report fails to make any provision whatever for the studies of botany and zoölogy, or generally for the subject of biology. Why the particular branches of physical geography recommended have been selected to the exclusion of the remaining branches is difficult to say.

In conclusion, I desire to take direct issue with the statement repeatedly made during the Conference, and contained by inference in the Majority Report, that all existing works on physical geography are practically useless because insufficiently modernized and advanced.

The magnificent works of Humboldt, the valuable comparative geography of Ritter, and the classic writings of Guyot, treat of physical geography or geophysics in its truest, broadest sense, and need far better argument and more convincing reasons than those advanced by the Majority Report, in order to be successfully relegated to obscurity.

It may be interesting here to note how exceedingly new is the modernized and advanced physical geography referred to in the Report, that the Conference express their conviction that, in all probability, it cannot be taught except by the happy few who have mastered it, and that the Conference, therefore, gravely recommend that until Physiography be put in accessible form the study of geology, pure and simple, be substituted for it. That they should be willing to recommend the displacement of a well tried branch for the sake of a branch they acknowledge cannot yet be generally taught, can hardly be regarded as partaking of that broad, liberal spirit in modern educational matters so necessary for true advance.

EDWIN J. HOUSTON.

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NATIONAL EDUCATIONAL ASSOCIATION

REPORT OF THE COMMITTEE OF TWELVE ON RURAL SCHOOLS

APPOINTED AT THE MEETING OF THE NATIONAL EDUCATIONAL ASSOCIATION, JULY 9, 1895

WITH APPENDICES

PUBLISHED BY ORDER OF THE BOARD OF DIRECTORS OF THE ASSOCIATION

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1897

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REPORT OF THE

COMMITTEE OF TWELVE ON RURAL SCHOOLS

To the National Council of Education:

The undersigned Committee of Twelve on Rural Schools, appointe at the meeting of the National Council of Education, Denver, Colo., Jul 9, 1895, has the honor to submit the following report discussing the rur school problem in its four several aspects, each of which has been th special care of a subcommittee of three persons, who have submitted the results from time to time to the criticism of the entire committee. The subcommittee reports are preceded by a general introduction, written b the Chairman of the Committee of Twelve, in which a history of the fo mation of the committee is given, together with a brief summary of th recommendations of the several subcommittees. In the appendix will b found a number of valuable contributions illustrative of different poin made in the several reports.

HENRY SABIN,
D. L. KIEHLE,
A. B. POLAND,
C. C. ROUNDS,
J. H. PHILLIPS,
B. A. HINSDALE,
S. T. BLACK,
W. S. SUTTON,
L. E. WOLFE,
W. T. HARRIS,
L. B. EVANS,
C. R. SKINNER.

REPORT OF THE

COMMITTEE ON RURAL SCHOOLS.

INTRODUCTION.

To the National Council of Education:

The undersigned, Chairman of the Committee on Rural School appointed at the meeting of the National Council of Education, Denver Colo., July 9, 1895, would respectfully submit the following report:

At the meeting of the Council on July 5 the Committee on State School Systems made a report on the Rural School Problem, through its chairman, Henry Sabin. C. C. Rounds, President of the Council urged immediate action, in view of the importance of the subject, and of the growing interest in the question of improving the condition of the rural schools. Other members joined in the discussion, and, on motion of B. A. Hinsdale, the chair was directed to appoint a committee of five who should submit a plan for the further investigation of this subject.

July 9 the committee reported as follows:

Resolved, That there be undertaken, under the auspices of the Council, an investigation of the subject of Rural Schools, embracing such topics as revenues and expenditure the constitution, organization, and duties of boards of management and control, and the provision of suitable teachers. More definitely, said investigation shall be conducted in general on the lines laid down in the report of the Committee on State School System submitted to the Council at its present session.

Resolved, That a committee of nine be appointed to conduct this investigation, said committee to consist of the following persons: Henry Sabin, of Iowa; D. L. Kiehle of Minnesota; A. B. Poland, of New Jersey; C. C. Rounds, of New Hampshire J. H. Phillips, of Alabama; B. A. Hinsdale, of Michigan; S. T. Black, of California W. S. Sutton, of Texas; and L. E. Wolfe, of Missouri.

Resolved, That the Board of Directors of the National Educational Association be urgently requested to appropriate, at some session to be held during the course of the present annual meeting, the sum of two thousand five hundred dollars, or such part thereof as may be necessary, to defray the expenses of this investigation, including the publication of the report of the committee.

Resolved, That the committee should report within the period of two years, in such form as it may determine, and that it be authorized to publish its report.

Respectfully submitted,

B. A. HINSDALE,
G. P. BROWN,
D. L. KIEHLE,
J. R. PRESTON,
EARL BARNES,
Committee

REPORT OF THE
COMMITTEE ON RURAL SCHOOLS.

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G. P. BROWN,
D. L. KIEHLE,
J. R. PRESTON,
EARL BARNES,
Committee

IV. Instruction and Discipline. Subcommittee: W. T. Harris, Chairman; A. B. Poland, L. E. Wolfe.

1. Methods of teaching and government peculiarly affecting rural schools.

2. Courses of study, text-books, and other appliances.

3. Working programmes.

4. Gradation and classification of pupils.

5. The relations of rural schools to their environments: as to farm life, mining life, etc.

It was also provided that the investigation of the several subdivisions of the general subject should follow two main lines:

1. The condition of rural schools now existing.

2. Changes to be recommended; what is, and what should be.

It was not thought necessary that the committee should go into history or development farther than to make the conditions that now exist, and the reforms that are recommended, intelligible. It was also recommended that changes to be made, or reforms to be proposed, should have respect to existing facts; that they should be practical in the rational sense of that word.

It was further left to the several subcommittees to determine the methods to be employed in carrying on their work, and to exercise the greatest freedom in enlisting aid from every possible source.

Each subcommittee was thus left free to formulate such questions as seemed best designed to elicit the desired information in the most definite form.

The committee met at Jacksonville, Fla., February 18 and 19, 1896, for consultation and comparison of results. An informal meeting was held during the sessions of the National Educational Association at Buffalo in July, 1896, at which time it was determined to hold a meeting of the full committee at Chicago November 18 to 21, 1896. The chairman of each subcommittee was also directed to have such preliminary matter ready at that time as would embrace all the essential points necessary to a fair understanding of the scope of the final report to be made to the Council in July. It was also voted to ask certain experts in rural school matters to meet with the committee, in order that it might have the benefit of their experience.

The committee met at the Auditorium in Chicago, as determined. The entire committee was present at each session, with the exception of D. L. Kiehle, who for satisfactory reasons was not present until Thursday morning. The following gentlemen were present upon invitation of the chairman:

John MacDonald, editor of the *Western School Journal*, Topeka, Kan.; W. Stetson, State Superintendent of Maine; J. L. Pickard, of Iowa

City, Ia.; O. T. Bright, County Superintendent of Cook county, Ill.; Albert G. Lane, City Superintendent of Chicago; D. E. McClure, County Superintendent of Oceana county, Mich.; W. H. Chandler, of Madison, Wis.; President F. W. Parker, of the Chicago Normal School; G. R. Shawhan, County Superintendent of Champaign county, Ill.; John Trainer, of Decatur, Ill.; T. C. Chamberlin, of The University of Chicago; J. J. Schobinger, of Morgan Park, Ill.; W. S. Jackman, of the Chicago Normal School; A. W. Edson, State Agent, Boston, Mass.

Wednesday and Thursday were devoted to general discussion, one half day being allotted to each of the four subcommittees in the following order: School Maintenance, Supervision, Supply of Teachers, and Instruction and Discipline. Friday and Saturday were devoted to the consideration of the preliminary reports submitted by the chairmen of the respective subcommittees. The sessions were held from 9 A. M. to 12 M. and from 3 to 6 P. M. In order to facilitate discussion printed or typewritten copies of the main propositions in each report were placed in the hands of those present. During Friday and Saturday the reports were read section by section, and, after alterations and amendments as suggested by various members of the committee, they were adopted.

It was further ordered that the reports of the different subcommittees should appear in the printed volume in the following order:

1. School Maintenance.
2. Supervision.
3. Supply of Teachers.
4. Instruction and Discipline.

On motion the entire matter of printing the report, when completed, was intrusted to the charge of the chairman of the committee, with the suggestion that he confer with the United States Commissioner of Education in regard to securing the co-operation of the national bureau for publication purposes.

T. C. Chamberlin, of The University of Chicago; W. S. Jackman, of the Chicago Normal School, and F. H. King, of Madison, Wis., were requested to prepare a discussion of the possibilities of a course of study especially adapted to agricultural environments. This discussion constitutes *Appendix G* of this report.

Appendix A, consisting of a paper read by B. A. Hinsdale before the Department of Superintendence at Jacksonville, is published by order of the committee. The course of study for rural schools and the paper by Dr. White, designated as *Appendix I*, and the paper by F. W. Parker, *Appendix H*, are inserted by the same authority. The other matter in the appendix has been placed there in accordance with a vote of the committee, leaving the selection to the choice of the chairman of each subcommittee and of the general committee.

The date for publication of the report was fixed at from four to six weeks before the meeting of the National Educational Council at Milwaukee. After determining that the chairman of each subcommittee should send a typewritten or printed copy of his report to each member of the committee before publication for suggestions or amendments, the committee adjourned.

In the foregoing historical statement no attempt has been made to follow the exact order of proceedings, but only to gather from the Secretary's records such main points as will give the Council exact information of the methods adopted by the committee.

As soon as possible after the adjournment of the committee the chairman of each subcommittee prepared his report, and printed or typewritten copies were sent to other members, and also in all cases to persons who were supposed to be able to point out omissions or to suggest alterations. As a result these reports represent the combined experience of many competent persons besides members of the committee. This method led to much correspondence on the part of the chairmen, but it has undoubtedly aided them very materially in making a broader and much more comprehensive report. The committee found itself confronted from the beginning with the fact that the environments of schools differ so much in various sections of the country that it is impossible to make other than very general suggestions. Conditions vary so much between Maine and California, or Minnesota and Texas, that what would be an excellent system in one would possibly fail in the other.

SCHOOL MAINTENANCE.

Those who read the following reports will find that several recommendations are made by more than one subcommittee. Thus in the matter of organization the necessity of adopting a larger unit than the district, as the township or the county, is very strenuously insisted upon by two or more subcommittees. It is a fact of such great importance that other essential points hinge upon this. The arguments are very fully stated in the report of the Subcommittee on School Maintenance, but the general committee is fully agreed upon the desirability of effecting this change wherever the district system at present prevails. It would conduce to effectiveness and simplicity of organization; to economy in the use and distribution of funds; to the equalization of the burdens of taxation, and to a system of supervision which would produce better results from the instruction given in the rural schools.

Again, all the subcommittees are strongly in favor of the consolidation of schools which are too small to employ profitably the time of one teacher into larger schools, when practicable, in order that better instruction may *be provided* than is possible under the present system. This involves

paying for the transportation of pupils to some central school at public expense. The different subcommittees have reached this con-sion, each from its own standpoint. The inferences drawn from facts d figures are too obvious to need any argument. The conclusions rived at in the discussion of the two points, organization and con-lidation, are very broad, and would seem to be applicable to some ction of nearly every state in the Union.

The manner of raising and distributing the revenues has been care-lly investigated, and the subcommittee having that subject in charge ems to have reached very wise and just conclusions. The township, or ecial district, in which the parents of the pupils reside should contribute the school funds, as should the county and the state. Every interest oncerned in the education of children should bear a proportionate share f the burden of taxation. In the distribution of school funds, because of the community of interests involved in popular education, the strong and wealthy must contribute to the support of schools in weak and impov-erished districts. It may not be possible to provide equal school facilities in every part of the state, but every district in which a school is estab-lished should be assured beyond all doubt of a sufficient sum of money to employ a competent teacher for the minimum number of months or days fixed by the law. The duty of providing for the pupils of the rural schools the means whereby they can have the benefit of high schools in their neighborhood has not been overlooked. It is not necessary to dis-cuss fully these points. Attention is invited to them as set forth in the report of the Subcommittee on School Maintenance.

SUPERVISION.

The subject of school supervision is discussed under the general divi sions of state, county, township, and district. The task assigned this sul committee is difficult because, as far as rural schools are concerned, the re no well-defined lines of work upon which there is a general agre ment. There is great need of supervision which is intelligent and wh arries with it some degree of authority. As a general thing, the offi nown as state superintendent has only advisory authority. He ake suggestions, but they carry with them no more force than the n the character and influence of the officer who makes them. He is ar removed from the rural schools, and is too much engaged in matters connected with his office, to come into close touch with them heir present interests.

No one questions that supervision should be compulsory. Ir uch is the case in most states today. The great question connecte t is how to make it effective. A supervisor who has charge of dred schools or more, scattered over an entire county, finds it imp

to control and direct them in accordance with well-devised plans. Accordingly the subcommittee urges township or district supervision where it is practicable, or that each supervisor should have such deputies or assistants as will enable him to reach every part of his field. Again, if supervision is to be effective it must be the product of skill and intelligence. As well put an ordinary seaman, selected from the crew by lot, in charge of an ocean steamer, with its precious cargo of lives and wealth, as to place a raw, uncultivated man or woman, selected by the chances of a political convention, in charge of the schools in which our youth are being trained for citizenship. The subcommittee is of the opinion that certain qualifications, moral and mental, with some experience in teaching, should be exacted from everyone who aspires to the duties of a supervisory office. The duties which are incumbent upon a supervisor of schools have been so minutely discussed that it is not necessary to restate them here. It is sufficient to say that knowledge and skill, enthusiasm and patience, sympathy and forbearance, firmness and justice, are requisite in one who would discharge his duties conscientiously and with due regard to the highest good of all concerned.

The importance of bringing the school into touch with the farm and the home has been dwelt upon at some length (*Appendix O*). To this end the supervisor should make himself thoroughly acquainted with peculiar conditions of life in his supervisory district. It is not enough that he visit the school and consult with the teacher. He must meet school officers and parents, awaken their sympathy and arouse their interest, if he would do his whole duty. He must have a controlling influence in the selection of teachers, in the erection of school buildings, especially as concerns sanitation and hygiene, in teachers' meetings, and in general school work throughout his entire territory.

A wise supervisor cannot fail to observe carefully the environments of the school, which exert a powerful, though unconscious, influence upon the character of the pupils. The bearings of the æsthetical upon the ethical side of the child's nature, the relations of music and art as determining the development of the child along right lines, should be observed and guarded as well in the rural as in the city schools.

SUPPLY OF TEACHERS.

The question of the support afforded teachers is one great hindrance in the way of improving the rural school. The following table showing the average monthly salaries paid teachers in rural schools has been compiled from answers to circulars sent out to state superintendents. It is unfortunate that in most states the statistics make no distinction between city and rural school-teachers. Consequently many of the returns are

estimated. They are valuable, however, for purposes of comparison and general information.

	Males	Females		Males	Females
Alabama	$25	$20	Missouri	$40	$34
Arkansas	33	30	Montana	60	45
California[1]	67	56	Nebraska	35	30
Colorado[2]	50	45	Nevada	85	60
Connecticut	30	30	New Hampshire	30	30
Delaware	35	33	New York[4]	37	37
Illinois	30	25	Ohio	35	29
Indiana	40	35	Pennsylvania[5]	42	33
Iowa	35	30	Rhode Island	40	36
Kansas	40	32	South Carolina	30	27
Kentucky	36	34	South Dakota	36	31
Louisiana	40	33	Utah	53	37
Maine	35	22	Vermont	39	27
Maryland	29	29	Virginia	28	25
Massachusetts[3]	32	26	West Virginia	36	36
Michigan	29	25	Wisconsin	46	30
Minnesota	40	31	Wyoming	45	40

In connection with above table we must take into account that in only a few states is the average length of the school over eight months. This includes cities and towns, as well as rural districts, so that it is fair to conclude that in general the country teacher finds employment not to exceed seven months in a year, and often not more than five or six.

The subcommittee regrets that so few are able to apprehend the qualities essential to a good teacher. Professional fitness is ignored in nearly every case. The smaller the unit of organization the greater is the disposition to engage teachers for short periods of time. All engagements should be for one year at least, and frequent changes of teachers should be discouraged.

Perhaps the most important subject intrusted to this subcommittee has reference to the training and preparation of teachers. There is no doubt that the normal school in most states does not reach down and take hold of the common district school. There is room, as indicated in the report, for a series of normal training classes with a course of one year, or at most two years, not modeled after a state normal school, but suited in all respects to the needs of a class of young people from whom we draw nearly all our rural school-teachers. Instruction for one year in such a school could be made to so inspire students with a desire for knowledge,

[1] Includes schools of not more than two teachers.

[2] Includes the schools in the agricultural sections only.

[3] Based on fifty-two male teachers and 143 female teachers in towns under $500,000 valuation.

[4] $9.26 a week, counting thirty-three and one-third weeks in a year.

[5] Not including the city of Philadelphia.

to so fill them with the teaching spirit, as to work a most beneficent change in the schools coming under their charge. The proposition to establish continuous sessions in normal schools, as set forth in the sub-committee's report, is full of promise for the improvement of rural school-teachers without withdrawing them from active service. The terms and courses could, under the plan, be so adjusted as to enable them to attend a normal school for work in regular courses of study during that large part of the year not occupied in teaching. A course for one year is indicated below. If extended to two years, the extension should consist not so much in the introduction of new branches as in doing something more than elementary work in the branches already in the curriculum.

COURSE OF STUDY FOR ONE YEAR OF FORTY WEEKS.

General Divisions	First Term	Second Term
Language.	Reading and Literature.	Grammar. Elements of Rhetoric.
Mathematics.	Arithmetic. Algebra.	Geometry.
Natural and Physical Science.	Geography. Elements of Chemistry.	Botany. Elementary Physics.
History.	U. S. History. Civil Government.	General History. Biography.
Professional Studies.	School Economy. Elementary Psychology Practice Teaching.	Physiology with special reference to hygienic conditions. Practice Teaching.

The number of lessons in each branch per week must be determined by the conditions and necessities of the class. Singing and drawing should have such a place as their importance demands. At least two lessons per week for each of them should be insisted upon.

The course of study to be completed in one year is arranged according to relation of subjects and not according to order of study. It embraces, so far as elements are concerned, those subjects which are necessary in order to enable a teacher to deal with organic and inorganic nature, with history and civil government, with literature and language, and with so much of music and art as the conditions of the school will admit. While provision is made for professional training, the success of such a course as this as a means for preparing teachers for their work will depend almost entirely upon the good judgment and skill of those who are entrusted with the management of the school. The tendency to overload

such a course, to crowd two years' work into one, will have to be ver carefully guarded against. The entire course is intended to be only ele mentary, and is for the benefit of a large class of teachers who have bu little preparation, and are not able from various reasons to devote mor than one year's time to attendance upon a normal school. The advan tages of a school of this nature would be greatly enlarged by the possessio of a carefully selected library, and of sufficient apparatus for purposes e illustration and experiment. If the students could be taught to make thi apparatus, with maps, charts, etc., for use in rural schools, it would add t their usefulness as teachers. Very great advantage would accrue to th pupils from coming in contact with disciplined minds in the persons c their instructors. But few rural teachers know how to study or how t get the most out of the books which fall into their hands.

Summer schools, reading circles, and institutes have received their shar of attention. The whole ground has been well covered and will repay careful perusal.

The scheme for the examination and certification of teachers has bee thoroughly digested. There will be some who may not agree with th subcommittee in all particulars, but no one will dispute the fact that to many teachers in the rural schools are contented with the lowest grade c certificate which will answer the purpose of the law. There is a grea necessity for some scheme such as is here recommended, whereby teache can rise step by step in their calling, if they earnestly desire to improv On the other hand, this scheme furnishes a reasonable excuse for not afford ing further professional recognition of any kind to those who show n disposition or no ability to do anything better in the line of preparatio for their work.

INSTRUCTION AND DISCIPLINE.

The report under this head will be found to embrace several importa recommendations. Some of these will provoke discussion, but most c them are of such a nature as to commend themselves to every thoughtfu person. The report opens a broad field of inquiry, which must of nece sity receive more attention as the wants and necessities of rural schoo are better considered.

The evils of attempting to grade the rural school as the city school graded are very clearly set forth, accompanied by the suggestion that thos normal schools which as part of their work train teachers for rural schoo should carefully impress upon such teachers the necessity of considerin the size of the school in determining the uses and abuses of grading an classifying pupils. This suggestion is all the more pertinent in vie of the movement in many states to require some previous profession training as a prerequisite for entering any public school as a teacher.

Considering that the course of study for the rural school need not differ in any material point from that provided for the city school, it is urged that the aim of such a course is to enable the pupil to recognize the con ditions of inorganic and organic nature, and to pursue the studies of literature, language, and history, as they are necessary for his entrance upon civilization. The difference in courses of study for rural or city schools is found to be in those collateral branches which relate to the environment of the pupil or to the neighborhood in which he dwells. The report upon this point is very full and will repay a careful study of its details. The subcommittee calls especial attention to the relation of the course of study to the system of grading and classification. The suggestions made are of great practical value in any discussion which endeavors to determine the method of adapting a course of study to the wants and conditions of rural schools. It cannot but be very helpful to be told that the course of study is the measuring rod used only to determine at what point in his work the pupil has arrived, and not a Procrustean bed used to give the work the lifeless beauty of a dead uniformity.

The consolidation of those schools which have become so reduced in numbers as to render it unprofitable to maintain them separately, the transportation of pupils at public expense to other schools than their own, and the concentration of higher-grade pupils at a central point, are urged as means of lessening many of the evils from which rural schools are suffering. This provision, having been grafted into the law of several states, bids fair to prove of great benefit. Wherever it has been tried it has commended itself as economical, and as a means of affording better teachers and consequently better schools. The matter of improved roads enters incidentally into this discussion, as having great bearing upon the question of transporting children to central points for school purposes.

In connection with school exercises at the town or county center, once or twice a year, competitive examinations are not recommended unless they are very carefully guarded. The feature of social intercourse, the stimulus which comes from meeting with his mates, have advantages which ought not to be overlooked or neglected.

Home reading, with what is termed school extension, is dwelt upon at such length as its prominence demands (*Appendix O*). To carry good reading material, whether of science, literature, or fiction, prose or poetry, into the schools and homes of the rural districts must be a part of any educational scheme which has for its object making country life more endurable or more attractive. The various recommendations of this part of the report are worthy of careful consideration at the hands of those even who may not wholly agree with them.

CONCLUSION.

Your committee has called in the aid of a number of persons whos time and thought have been largely given to matters connected with th management and instruction best suited to the wants of rural schools It was found impossible to embrace the entire matter placed at our dis posal in the body of the report. We have, therefore, printed much of i in the form of an appendix, believing that it will add largely to th value of this report. It is not to be supposed that every point has bee covered, or that the entire subject has been exhausted. The committe has endeavored diligently and to the best of its ability to throw some ligh upon what may possibly be regarded as a collection of subjects embracin a very large field. While there are many points worthy of especial atten tion, I have gathered up the following as a brief summary of those whicl may be considered of most pressing importance:

SUMMARY.

1. For purposes of organization, maintenance, or supervision, noth ing should be recognized as the unit smaller than the township or th county; the school district is the most undesirable unit possible.

2. Every community should be required to raise a certain sum for th support of its schools as a prerequisite for receiving its share of publi money. A certain definite sum should be appropriated to each schoo out of the state funds, and the remainder should be divided in accordanc with some fixed and established rule, a discrimination being made in favo of townships most willing to tax themselves for school purposes.

3. One of the great hindrances to the improvement of the rural schoo lies in its isolation, and its inability to furnish to the pupil that stimu lative influence which comes from contact with others of his own ag and advancement. The committee, therefore, recommends collectin pupils from small schools into larger and paying from the public fund for their transportation, believing that in this way better teachers can b provided, more rational methods of instruction adopted, and at the sam time the expense of the schools can be materially lessened.

4. There is a tendency to fill the rural schools with untrained, imma ture teachers. The establishment of normal training schools, unde competent instructors, with short courses, each year of which shall b complete in itself, would do much to remedy this evil. The extensio and adjustment of the courses and terms of the state normal schools s as to constitute a continuous session would enable them to contribut more directly than now to the improvement of the teachers of rura schools (*Appendix S*). The state would then be justified in demandin some degree of professional training from every teacher in the rural a well as in the city schools.

5. The establishment of libraries, the prosecution of the work of school extension by lectures and other means, the introduction of such studies as will have a tendency to connect the school and the home, especially those having a direct bearing upon the everyday life of the community, and the necessity of applying the laws of sanitation to the construction of rural schoolhouses, demand immediate attention.

6. The rural schools are suffering from the want of official and intelligent supervision. In every state some standard of qualifications, moral and intellectual, with some amount of actual experience, should be demanded by law from those who aspire to fill the office of superintendent or supervisor of schools.

7. Good morals and good manners constitute an assential part of an educational equipment. The inculcation of patriotism, of respect for law and order, of whatever tends to make a good citizen, is of as much importance in a small as in a larger school. Regularity, punctuality, obedience, industry, self-control, are as necessary in the country as in the city school. Country school-teachers should call to their aid the beautiful things in nature, that with reverential spirit they may lead the children to reverence Him who hath made all things good in their season.

HENRY SABIN,
Chairman.

REPORT OF THE SUBCOMMITTEE ON SCHOOL MAINTENANCE.

The maintenance of an efficient state system of public instruction involves numerous sociological factors of an important character. This is particularly true in a democratic state, where public opinion gives the final sanction to all public activities. Moreover, there is good reason to think that it is even more important to consider such factors carefully when providing rural schools than when providing urban schools. The bearing of the wealth of the state, both in the aggregate and in relation to population; the density of population and the ratio of rural to urban population; the ratio of the adult or wealth-producing population to the population of legal school age; the facilities for travel and the character of the people in respect to race elements—the value of such factors as these in the problem is almost too plain for argument (*Appendix A*).

The organization and administration of the powers of government must also be considered. The government of the United States stands to all the members of the Union in the same relation; that is, within the states *it has no* proper educational function whatever. The state government, *however, is a constant* factor: it exercises the central state authority. But

when we take the next step we are at once confronted by contradiction and confusion. First, we find in New England the town system of local government. Here nearly all the local governmental functions are performed by the town; the county exists, but it is more a judicial than a political unit, and in Rhode Island it is wholly judicial. The town is much, the county little. Secondly, the county system, which exists throughout the South and in several of the western states, more than reverses these conditions. The county is the organ of local government, and the township does not commonly exist. The county is divided into districts for the purpose of defining the jurisdiction of justices of the peace, into election precincts, and sometimes into school townships. Here the county is everything, the town nothing. Thirdly, the old middle states and most of the western states have what is called the mixed or compromise system. In these states the township is less than in New England and the county more, the county less than in the South and the township more; in other words, both township and county are employed in something like equal measure. Again, two types of the mixed system are found in different states. In New York and the states that have imitated her the county legislative and executive board is composed of supervisors elected by the several townships, while in Pennsylvania and the states that have followed her example this board is composed of commissioners elected by the county at large. The county is, therefore, a governmental organ in all the states, while the township is found only in two groups of states. Moreover, in those states where the town or township is found it varies considerably in powers in comparison with the county. These elementary governmental facts it is necessary to remember, because they directly affect the matter in hand. Manifestly, the people will not be apt to create local organs of government for any one single purpose unless they deem it absolutely necessary; on the other hand, they will manifestly use for any such purpose, as far as consistent, the same organs that they use for other local purposes. This is just as true of schools and education as of other public interests. Except that Vermont has a county examiner of teachers, no mention is made of the county in any New England school law;[1] no mention is made of the town or township in any southern state; while the states that have the compromise system use both the county and the township as organs for carrying on their schools. It will be seen that no account is here taken of the city or municipality, because this is common to all the states and does not relate to rural schools.

[1] Vermont, Maine, and New Hampshire once enacted laws creating the county superintendency, but these laws did not remain long on the statute books. No state is likely to use the county for an administrative school purpose unless it uses it for other administrative purposes.

An ambiguity in the use of the term *town* is also to be mentioned. The *township* of the middle and western states corresponds in general to the New England *town;* while in these states the *town* is a village, hamlet, or even city. All the recommendations made in this report will recognize distinctly the facts now stated.

Still another preliminary explanation is called for. The term *district*, as used in school legislation and in educational discussions, is very misleading. The two leading senses of the word must be sharply discriminated. This can be done by describing the two principal forms of local school organization.

1. *The Town- or Township-unit System.*—This is something wholly different or separate from the town system of local government described above. The two systems may exist together, but not of necessity so; the town- or township-unit system, called also the *town-district* system, is found in connection with both the town and the compromise systems of local government; it could not exist with the county system, as a matter of course. The town system of local government relates to local affairs generally; the town- or township-district system to schools only. The name *township-unit system* means only that the town or township is the ultimate unit of school organization and administration. This unit, with such assistance as it receives from the state or county, provides and carries on its own schools independent of any other unit. It raises funds by taxation and expends them, subject only to the law of the state. It is the organized town or township, a body corporate and politic, under its educational aspect. The local authority is sometimes a school committee, as in Massachusetts; sometimes a board of education, as in Ohio, and again a township trustee, as in Indiana. Again, the township-unit system does not necessarily involve the consolidation of rural schools. The school children within the unit may all be brought together in one central school at some advantageous point, or they may attend a plurality of schools scattered through the township. In the second case, the limits or boundaries of the several schools must be marked off for the regulation of school attendance, unless indeed pupils are permitted to attend such schools as they please, and these areas are commonly called *districts* or *school districts*. In Ohio they are known as *subdistricts*, and they serve also as units of representation in the township board.[1] Here then are

[1] The explanation of the Ohio law on this point is historical. Previous to 1892 the township was the school district proper, but this was divided into subdistricts. The township board of education raised all the local funds by a tax levied on the taxable property of the township, and apportioned them among the subdistricts; the subdistrict boards of directors employed the teachers and carried on the schools. The voters of the subdistrict, *in annual school meeting, elected* the three directors, one every year, for three years, and *these again elected one of their* number clerk, who represented his subdistrict in the *township board. Under* the Workman Law of 1892 all the old powers of the directors

two clear uses of the term *district*: one is the town or township, and the other a part of the town or township defined primarily for the regulation of school attendance, but also sometimes serving as a unit of representation.

2. *The District System.*—Here *district* is used in quite another sense. Geographically, the school district is now commonly a subdivision of a town, as in Connecticut, or of a township, as in Michigan, or of a county, as in the county-system states. Ordinarily it is a body politic and corporate, and is the ultimate unit of school organization and administration. It has its own school committee or board elected by the voters of the district, in school meeting, and, with such help as it receives from the state or county, it builds its own schoolhouse and provides and carries on its own school or schools. It is, therefore, a taxing as well as an administrative unit. Under this system the district is the controlling factor of school organization. Not only is it the most democratic form of school organization, but it has been called "probably the most communistic as well as democratic feature of our political institutions, and is certainly the smallest minor civil division of our system."[1]

Still other districts are mentioned in the laws and reports, as special districts, city districts, borough districts, joint districts, and the like; but these names do not present any new features of an essential character.

These explanations premised, the subcommittee will divide this report into three grand divisions, *viz.*, Revenue, Distribution, and Organization. The last topic, however, will be considered only so far as relates to school maintenance. By school maintenance is meant the provision and support of public schools.

REVENUE.

The subcommittee submits that the first essential to the material improvement of the rural schools of the country is the provision of revenue sufficient for their adequate support. Accordingly, this is the first subject to be considered.

The educational items in the budgets of all progressive countries have assumed great proportions, and are all the time growing. The Commissioner of Education reports the expenditure for common schools in the states of our Union for the year 1894–95, not including payments on bonds, at $178,215,556. Seven states expended more than $5,000,000 and less than $10,000,000 each, and five more than $10,000,000 and less

were transferred to the township board, but the subdistrict was left for the regulation of school attendance and to serve as a unit of representation in the township board.

[1] Mr. Wellford Addis, Specialist in the Bureau of Education. See chap. xxxiv. of the *Report for 1894–95*, "The Social Unit in the Public School System of the United States."

than $20,000,000 each. New York alone stood above $20,000,000. In 1888–89 the total for the country was $132,129,000, and in 1883–84 only $103,909,528. But, unfortunately, we have no statistics showing the division of these vast sums between the rural districts and the towns and cities. A *city*, in the dictionary of the National Census Office, is a concentration of population containing 8,000 people or more of all ages, and in 1894–95 there were 574 cities in the country. The Commissioner of Education reports for the year 1894–95 that 3,302,841 children were enrolled in the schools of these cities, to 10,894,911 enrolled in other schools. He reports further that the maintenance of these city schools cost $74,721,332, of the others $102,876,359. But this is no proper division of rural and urban schools, since the educational conditions existing in many centers of population containing less than 8,000 people are the same as those existing in the 574 cities. At present it costs much more to school 1,000, 10,000, or 100,000 children in the cities than in the country, but this is mainly due to the fact that the education furnished is so much greater in quantity and so much better in quality. It is not improbable that, if rural schools were brought as near as possible to the level of urban schools, they would be quite as costly. At least, it is evident that the first condition of good rural schools is a sufficiency of funds with which to provide and maintain them. How shall these funds be provided?

I. A century ago the American people began to take an interest in the creation of permanent school funds or endowments. This interest was originally stimulated, if not created, by the policy that Congress foreshadowed in 1785, and subsequently firmly established, to endow the common schools in the public-land states with liberal grants of public lands. In every state in which Congress has exploited the wild lands either one-thirty-sixth or one-eighteenth part of such lands has been dedicated to the public schools. Beginning with Connecticut in 1795, nearly all the non-public-land states have also created such endowments out of their own resources. Several of them devoted the United States deposit fund of 1837 to this purpose. At the beginning of the century no one dreamed to what proportions public education would grow in one hundred years; and men thought, not unnaturally, that permanent endowments would greatly ease the burden of taxation for school purposes, and would keep the educational machinery of the state constantly running and well regulated. It will not be denied that, relatively, these funds have come far short of meeting the expectations of those who laid their foundations. There can be little doubt that, in many of the states, and particularly when such states were new and poor, they have hastened educational development; but it is quite certain that they have often *done great harm*, causing the people to rely upon the feeble income

derived from them, and to turn their faces away from the only adequate source of school maintenance, that is, public taxation. Texas has been gazetted as having the most magnificent possibilities of any state in the way of a permanent school fund, but some citizens of that state are questioning whether these possibilities may not prove other than unmixed blessing (*Appendix B*). The fact is, public schools in the United States have far outgrown all present or prospective endowments. In 1888–89 the income from such funds was $9,825,000 in a total of $125,111; in 1894–95 the corresponding figures were $8,336,612 and $597,691; that is, the per cent. fell from 7.4 to 4.7 in six years. New York and Ohio derive less than $300,000 each of their great school revenues from permanent funds, and Pennsylvania derives nothing from such a source. In fact, it would require a permanent fund of $400,000,000 to carry on, at the present scale of expenditure, the common schools either in New York or Pennsylvania. The subcommittee submits, therefore, that all permanent school funds, either state or local, should be carefully husbanded and wisely administered; that they should be preserved intact, and the income be scrupulously applied to the support of schools; that, under special conditions, it may be wise to augment funds or create new ones, as when certain miscellaneous revenues are devoted to that purpose; but that such funds must necessarily play a constantly diminishing part in popular education. Massachusetts is committed to the policy of adding to her fund $100,000 a year, raised by taxation, until a total of $5,000,000 shall be reached, and New Jersey to the policy of similarly dedicating the proceeds of certain rights that belong to the state; and to this there is no objection but for these states, or any others, to lean heavily upon such funds for school maintenance would be a most fatuous policy. Public education is, or at least should be, a recognized function or service of the state; the public schools of the country are civil schools, created and carried on by the civic authority, and they must rest ultimately upon the same general means of support as the other functions or services of government. As well, therefore, endow any other branch or function of the state government, such as the asylums and hospitals, the judiciary, the civil service, or the militia, as the state schools!

II. Gifts to popular education should be sedulously encouraged. Education has long been a favorite object with public benefactors, and annals of every progressive country show, and none more convincingly than our own. No doubt when the public mind is aroused to the actual needs of popular education, and school taxes are abundant, such persons who choose an educational object for their beneficence will rather be inclined to seek some other form or kind of education. Still, the constitution or laws of nearly every state, if not indeed every one, pro-

for the acceptance and use of private gifts for school purposes, and there are generous persons who are peculiarly interested in the common schools. Scattered over the country are many local public school endowments that had a private origin, and such gifts have not come to an end. The subcommittee is not aware that there are any statistics showing how far private benevolence contributes to public education, but it is apprised that the contribution is by no means contemptible, and it believes that it might be made considerably larger than it is. The favorite forms of such contributions, under existing conditions, are most likely to be land for building sites, and apparatus and libraries for schools; and the subcommittee is of the firm opinion that much more could be done than at present in all these directions, and particularly in the way of procuring apparatus and books for the schools in communities where the public funds that are available for these purposes are meager or insufficient.

III. The great resource of the public school *is*, and *must continue to be*, some form or forms of public taxation. The ratio of the total school revenues derived from taxes to those derived from permanent funds is all the time growing, and it will continue to grow. At two periods separated by six years the sources of the common-school revenues expressed in per cents. were as follows:

Year	Taxes	Permanent funds	Other sources
1888–89.....	85.9	7.4	6.7
1894–95.....	85.7	4.7	9.6

Manifestly such areas or units of taxation should be created, or continued if already in existence, as will fully develop the sound American principle, that *the whole wealth of the state shall be made available for educating all the youth of the state.* This is both right and necessary, for it must be remembered that, in the United States, education is a civil, or state, function, to be supported like other similar functions. What shall these units of taxation be? The subcommittee names those following as coming under the principle just stated:

1. *The State.*—A liberal provision of funds from the state treasury, to be distributed according to some rational method, is indispensable, as a rule, to the maintenance of a good system of state schools. Formerly the burden was mainly or wholly thrown upon the local units. The old Massachusetts plan was to throw upon the towns the whole burden of maintaining their own schools. But the greatly increased cost of schools, growing out of enhanced salaries, longer terms, and improved material equipment, long ago demonstrated that this plan must be materially

modified. Many local taxing units are too poor to carry such a load, and they must either abandon all hope of good schools or they must receive assistance from the state or social whole. This fact began to gain recognition as early as the middle of the century. When the constitution of Ohio, adopted in 1851, provided that the legislature should make such provisions, by taxation or otherwise, as, with the interest arising from the permanent school fund, would secure a thorough and efficient system of common schools throughout the state, the law-making power hastened to levy upon all the property of the state, as rated by the assessors, a state school tax of two mills on the dollar, to be distributed on the basis of the school enumeration. Taking the country together, the cost of public education is divided between two or more taxing units. Still the fact remains that the part which falls to the local unit is often disproportionate. In 1888–89 the per cent. of the total amount of school revenues raised by local taxation was 66.8 to 19.1 per cent. raised by state taxation. In 1894–95 the corresponding per cents. were 67 and 18.7. The ratio of the two elements is variable in different divisions of the Union and in different states of the same division. The per cents. raised by state tax, as reported, range all the way from zero to a maximum of 83.2, found in North Carolina. We should naturally expect the southern states, since local government is there less fully developed than at the North, to rely relatively much less on local taxation and much more on state taxation, and such is the fact. But political habit is not the only factor that enters into the problem; economical conditions also assert themselves. In a state where wealth abounds, and is somewhat evenly distributed throughout its limits, as where manufacturing and commercial towns are frequent, there is not the same necessity for the state, as a unit, to assume a large proportion of the whole burden that there is in a state where wealth is meager, and where such wealth as exists is largely found in a few concentrations of population, leaving large areas thinly populated and poor. These remarks will throw light on the per cents. of school moneys raised by state taxation and local taxation in the five divisions of states that the Census Office recognizes. The date is 1894–95. (See also *Appendix B.*) No account is here taken of income from other sources than taxation.

Divisions	State taxes	Local taxes
North Atlantic States	19.4	68.2
South Atlantic States	38.1	51.3
South Central States	48.4	31.7
North Central States	9.9	75.4
Western Division	23.0	61.3

In some of the states, as will be shown hereafter, local taxation must be more fully developed than in the past or present; in others, and these principal states too, the same may be said of state taxation.

2. In all states where, for other local purposes, the county is the sole unit of taxation, a liberal county tax should be levied for the schools This proposition applies especially to those states where the county system of local government prevails. In states where, for such purposes, the county is a large unit of taxation, it may be wise to levy a county school tax; that circumstances must determine. This remark applies to the states having the mixed system of local government. Under the town system county taxation for schools would be out of harmony with the social and political traditions of the people, and could be accomplished only through a change of habit; perhaps this end is attainable. For the year 1894–95 the Commissioner of Education shows that 67 per cent. of the total school revenues of the country came from local taxes. The scale ran from 1.7 per cent. in North Carolina to 98.2 in Massachusetts. Unfortunately we have no statistics showing from what sources the local taxes come; how much from districts, towns, and counties respectively. The point must, however, be strongly pressed that local supply for public education should be forthcoming as well as state supply. It is a great mistake to teach the people to look altogether, or mainly, to the state treasury for school maintenance. They should rather be taught to depend in due measure upon themselves. It is the confident opinion of the subcommittee that some states are now committing this mistake. Many states having the county system of local government have in the counties a resource for school maintenance upon which they have never adequately drawn.

3. In those states where the town or township is a large taxing unit for other local purposes, it should also be made to contribute liberally to public education. This recommendation it would be idle to urge in most of the southern and in some of the western states, because the civil town or township does not exist, and it would be vain to urge its creation for school purposes exclusively. But in those states where the town and mixed systems of local government exist, a township school tax would be congruous with the general social and political habits of the people. The desirability of local taxation for school purposes was urged under the last head. Such taxation develops self-reliance and local character, and tends to awaken and keep alive the interest of the people in the schools. The town was the sole school-taxing unit in old New England, and it is still a prominent, sometimes almost an exclusive, one throughout the northern states. The local school taxes of New England are town and district taxes, and, taken together, they range from the minimum of 69.2 per cent. of the whole in Maine to 98.2 in Massachusetts. It can hardly be

doubted that the New England states, as well as some others, now throw the burden too heavily upon the towns and districts, and that they will find it advantageous considerably to raise the ratio which state taxation bears to local taxation. The other New England states will probably follow, sooner or later, the example of Maine, which raises nearly one-third of her school money by state taxation. In some states, no doubt, the townships should carry a heavier weight than at present, at least as compared with districts; at all events, the township should bear a reasonable part of the cost of its own education.

4. Special districts, as incorporated villages, towns, and cities, the subcommittee considers not only proper but necessary units of school taxation. Such districts are the concentrations, large or small, of population and wealth; they are the industrial and social centers of the country. We have already seen that, in 1893–94, $69,886,413 was expended for school purposes in the 443 cities of the Union. In Massachusetts $7,088,000 was expended in cities; in New York, $12,723,000; in Pennsylvania, $7,745,000; in Ohio, $5,097,000; in Illinois, $8,110,000. If we had the figures for the smaller cities and the incorporated towns, the aggregate would be much increased. Now, not only do the cities, taken together, raise by taxation nearly all of the school money that is expended in them, but, as will be shown in another place, many of them contribute largely to the support of rural schools. Again, they must in the future, collectively as before, contribute still more largely to this end. Special districts, then, are essential as taxing units, care being taken to secure approximately a fair distribution of the public burdens. As a rule, dwellers in cities are much better able to pay heavy taxes than dwellers in the country, but there is great reason to fear that they do not always do so.

The school district, in the commonly accepted sense of that term, is not a desirable taxing unit, but the contrary. It is now such a unit in a majority of states, and the subcommittee is decidedly of the opinion that it should either be made much less prominent than it is or be abolished altogether. As a rule, the second course is to be preferred (except in special districts already mentioned). The town or township is the smallest area that should be employed for this purpose. Even this may be overweighted, as can easily be shown. The unanswerable objections to district taxation are the inequality in burdens that results, and the inability of many districts to carry the load that good schools would necessarily impose upon them. A few statistics will make both propositions perfectly clear.

In 1871 Superintendent Fallows, of Wisconsin, published a table showing the amount of property assessed per scholar, in the school districts of a certain township, which he believed to be a type of the state of things generally existing throughout that state. The maximum was $2,860; the

minimum, $784; the average, $1,378. In 1878 Superintendent Graham, of the same state, published a table for the whole state, showing that the valuation of property per district varied from $2,300 to $1,979,708. Districts with less than $3,000 and districts with $40,000 were found in the same township. But the poor districts were required by law to maintain a school six months in the year, just as the rich ones were. The ratio of district taxation ranged from half a mill to fifty-five mills on the dollar. Superintendent Wells, of Wisconsin, published similar facts in 1893 for a number of states. He showed that in Rhode Island some districts were taxed fourteen times as heavily as others, and in Connecticut a similar disproportion existed. In New York the ratio of tax raised in two counties varied from .0012 per cent. in one district to .0431 in another. One township presented the extremes .0009 and .0070, and still another one .0048 and .0371. Two districts in one township paid respectively $5.66 and $58.11 per capita; two in another one, $5.43 and $60.37; two in a third, $11.25 and $181.85. "That is to say," says Mr. Wells, "the rate of taxation is seven times as great in one district as in another in the same town, and the per-capita cost of educating a child is eleven times as great."[1] But the first of these New York comparisons presents a ratio of almost forty to one.

Statistics such as these could be collected almost without limit. The most instructive way to study the subject is, so to speak, on the ground. If a man unfamiliar with it, who lives under the independent district system, will only take the trouble to collect the facts relating to his own county he may easily be astonished at the result. And yet, as a rule, the law lays upon the districts, rich and poor alike, the same burdens in respect to school maintenance. It is hard to see how or why the people have so long borne such inequalities—inequalities so contrary to the cherished American principle that the property of the state should educate the youth of the state; or, rather, it would be hard to see why they have borne them, if we did not know the extent of the public ignorance on the subject, and the strength of conservative habit, and did not see also how the district as a taxing unit is bound up in men's minds with the district as a unit of administration. But the two are not inseparable. The legislature of Ohio abolished the district as a taxing unit twenty-five years or more before it abolished the district as an administrative unit. In Connecticut, too, town taxes and district management are both met with in the same towns.

Before dismissing units of school taxation, a single point calls for closer attention. This is raised by the question, What is the advantage of looking to large units for supply rather than small ones?

The answer to this question rests upon the fundamental assumption

[1] "*Township System* of School Government." Madison, Wis., 1894.

that public education is a state function, and that the whole stat responsible for the education of all the youth of the state. Now, if cost of public education bore the same ratio to the ability of the pe to bear this cost in all the communities of the state, or, what is nearly same thing, if the wealth per capita of all the communities were ec then, as a matter of course, it would make no difference whether the sc tax were levied upon large areas or small ones. But this is far from b the case. The cities are indeed concentrations of both absolute pop tion and school population, as well as of wealth; but their wealth t to increase much more rapidly than either the absolute or the school ulation. The fortunes of the country are either made in the cities or tend to flow into the cities. The last report of the Census Office sh the per-capita wealth of the Union, of the states severally, and of the groups of states, but it does not show the per-capita wealth of the c and of the rural districts separately. The nearest approach to it is tables showing the per-capita value of real estate with improvements states and counties. These averages throw important light upon the ject, and some examples will be given.

Illinois: state average, $860.88; highest county average, $1,311 lowest county average, $164.64.

Massachusetts: state average, $848.01; highest county aver $1,564.10; lowest county average, $466.65.

New York: state average, $969.66; highest county average, $1,733 lowest county average, $305.80.

Ohio: state average, $689.01; highest county average, $1,562.56; est county average, $265.99.

Pennsylvania: state average, $719.13; highest county aver $1,049.88; lowest county average, $187.26.

If personal property were included, the extremes per capita woul still more widely separated than they are at present. Formal argu is not needed to show that the rich counties are much more able to tribute to the expense of government, education included, than the ones, and the proposition that a due proportion of such expense sh be thrown upon these units rests upon this fact. The tendency w be to remove inequalities in bearing the common burden. Levying local school tax upon the township instead of the districts that com it, or upon the county instead of the townships, would work in direction. It is very true that townships are unequal in per-c wealth as well as districts, and counties as well as townships; still fact remains that large units are less unequal than small ones. E step towards the highest taxing unit tends to distribute the burden equally. In fact, the argument for removing a portion of the bu from the small taxing units to the large ones is the same that justifie

in calling upon society to educate individuals or families that are too poor to provide for their own education. Why do we impose a public tax for educational purposes at all? Simply because education is a common interest, while some individuals or families are unable to educate themselves.

It may be said that the line of reasoning which has been followed would lead to placing the whole burden of state education at the door of the state treasury. Why should not the state defray the cost of the common schools, just as it defrays the cost of the reform schools for boys and girls, and of the asylums and hospitals? It must be confessed that this would be strict logic. However, we are to remember that governments are never carried on according to strict logic, and cannot be from the very nature of the case. What is more, there are the best of reasons, as shown above, for making education, to a reasonable degree, a local charge —reasons that do not apply to some other public services. The people are more likely to be vitally interested in the schools if a portion of their cost is derived from local taxes. In no country of the world, so far as the subcommittee is aware, is elementary education made an exclusive general charge. It is not desirable that it should be. The present contention is for a reasonable distribution among the several taxing units. At the same time, it may be worth observing that in some countries there is a strong tendency, as in England and France, to rely more than formerly upon general rather than local supply.

The appropriations for schools that states make from the common treasury differ greatly in form as well as in amount. Massachusetts levies no state school tax, but the legislature nevertheless votes various specific appropriations, as for the salaries and expenses of state agents, aid to pupils of normal schools, compensation of local superintendents, the payment of high-school tuition for pupils living in towns whose valuation of property does not exceed $500,000 and that do not maintain a high school. Connecticut raises annually a state school tax equal in amount to $1.50 multiplied by the number of persons in the state between the ages of four and sixteen, as enumerated annually. Rhode Island, while not levying a state school tax, so-called, votes enough money out of the state treasury, each year, to make, with the income of the permanent fund, a total of $120,000. New York raises annually, by taxation based on the real and personal property of the state, such sum for the support of schools as the legislature shall determine. New Jersey assesses and collects a total state tax amounting to $5 for each person in the state between the ages of five and eighteen years. It is this tax that places New Jersey at the head of the column of northern states in respect to the per cent. of school revenue derived from a state tax. The constitution of Pennsylvania provides that the state legislature shall appropriate every

year $1,000,000 from the state treasury for the use of schools, but th present appropriation is $5,500,000. Ohio levies a tax of one mill o the dollar of the grand tax duplicate of the state. Indiana raises eleve cents, and Kentucky twenty-two cents, on each $100 of taxable property The Michigan law directs the supervisor of every township to levy school tax of one mill on the dollar for schools within the township, bu as the proceeds are kept within the districts where they are raised, this i only a compulsory local tax; still it stimulates further local taxation fo the grand object. The legislature of Michigan also levies a specific ta on certain corporations, as railroads, etc., which is first applied to th payment of the interest on the various educational funds that the stat has borrowed, as the university, agricultural college, and common school funds, and then to the support of the common schools. Nebrask makes an annual levy and assessment not exceeding one and a half mill on each dollar's valuation on the grand list of taxable property. Th California system of school finance will be mentioned under distribu tion and in an appendix. These are a few of the states; still others wil be dealt with in connection with distribution.

The basis of school taxation, or the ultimate sources of school supply is an important subject. Whether more money can be had for th schools often depends upon the manner in which it is proposed to lev the tax. In general, taxation for schools will conform more or les closely to the character of the state taxing system as a whole. Whil admitting the great importance of the subject, the subcommittee doe not feel called upon to discuss it beyond offering brief remarks on tw or three points.

Pennsylvania meets her annual state school appropriation, in whol or part, by laying a tax of four mills on the dollar on all moneys loane by citizens of the state. Some states levy poll taxes, and some "occupa tion" taxes, for their schools. Quite miscellaneous sources of schoo revenue are met with in the state constitutions and laws. We find specifi taxes on dogs, and on banks, railroads, and other corporations. Escheat and forfeitures are often, or commonly, devoted to the schools. Th constitution of Nebraska prescribes that all fines, penalties, and license arising under the general laws of the state shall belong, and be paic over, to the counties where such fines, etc., may be levied or imposed also that all fines, penalties, and licenses arising under the rules, by-laws or ordinances of cities, villages, towns, precincts, or other municipa divisions less than a county, shall be paid over to the same respectively and further, that all these moneys shall be appropriated exclusively to th use and support of common schools in the respective divisions where th same may accrue. Nor is Nebraska peculiar in so dedicating such funds. It has been suggested to the subcommittee that an inheritance

tax would prove a popular, as well as an abundant, source of school supply.

DISTRIBUTION.

The subject of distribution is only less important than that of income. It is easy so to distribute school funds as, first, either to defeat, in whole or part, the very end sought in taxing the larger units for the benefit of the small ones; or, secondly, materially to weaken local enterprise and liberality, or wholly to destroy it. The subject will be considered under both these aspects.

1. The assistance that the large political and social units render to the small ones, as the state to counties, townships, and districts; or the county to townships and districts; or the township to districts, should be made contingent, in part at least, upon what the small units do for themselves. No community, it is believed, is so poor that it cannot do something towards educating its youth. Again, a state educational system should be so organized and administered as to stimulate, and not repress, local spirit and effort. It is a great mistake to remove the burdens of public education so far from the people that they forget, or tend to forget, their existence. The principle here involved is a vital one. History shows conclusively that popular education has flourished most in those states of our Union where government is most democratic.

It is difficult, or rather impossible, to lay down a general rule that shall govern the division of taxation between the state and the local communities. Two things are to be considered. One is the political institutions that exist in the state. If government is largely centralized at state capitals and county seats—*that* is one thing; if it is largely decentralized, as where the principle of local self-government is fully developed—*that* is quite another. For example, it would be idle to expect that the same results would obtain in the southern states that are found in New England, or even in that great group of states where the mixed system of local government prevails. The governmental machinery and the traditions of the people *will* assert themselves in such matters. The other factors to be considered are social, and particularly economical conditions. As remarked early in this report, where wealth is abundant and its distribution general and somewhat equal in different communities, school burdens may be thrown, and should be thrown, much more heavily upon localities than where the opposite conditions prevail. Density of population, relation of urban to rural population, average wealth per capita, ratio of wealth-producing population to the population of legal school age, the expenditure for education per pupil and per capita, and *the per cent. of* school revenue derived from state taxes and local taxes in *the different states*—are peculiarly interesting when studied together

(*Appendix A*). North Carolina shows the largest per cent. of state scho tax (that is, of the whole tax) of any state in the Union, while the averag population per square mile and the average wealth per capita are als small. Maine surpasses all the other New England states in these parti ulars. The proportionally high ratio of state taxation in the South is du to the two facts stated—political institutions and economical condition But there can be no manner of doubt that, as the cities of the Sout grow, towns multiply, and concentrations of population increase in num ber and in the value of property, local school taxation will material increase. Legislatures could hardly prevent it if they should try, and would be most unwise for them to try to do so.

2. Funds raised by the large taxing units should be distributed i such a manner as to bring the support of the rich and strong to the poo and weak. The only reason for taxing these units at all for gener purposes is to secure this end. On no other principle can a state scho tax, or even a county or township tax, be defended, unless indeed th county or township is a single school district. The practical question i How shall such funds be distributed so as not to defeat the end in view A historical account of the leading methods actually pursued will hel on the inquiry.

The public-land states may be divided into two classes. From th admission of Ohio to that of Arkansas (1803–36) Congress gave to th congressional townships of such states, severally, 640 acres of land eac for the perpetual use of schools, and vested the title in the state legisl tures. Accordingly, in these states every township has its own ind pendent permanent school fund,[1] which is sometimes managed by loc authorities and is sometimes in the keeping of the state. General speaking, the sum of the township funds makes the so-called state scho fund, so far as it is derived from public lands. If the township-unit syste prevails, the ultimate distribution of income has been made in advanc if the district system, then the township distributes to the districts. Fro the admission of Michigan to that of Utah (1837–95) Congress gav the common-school lands to the states as units rather than to township which resulted in the establishment of consolidated state school fund The annual income from these funds, so far as the subcommittee informed, is uniformly distributed to the local school organizations on th basis of the youth of legal school age as enumerated every year. Th ages vary, but the principle does not change. It should be added th since the admission of California, 1850, 1,280 acres of common-scho lands have been given to every congressional township.

The rule of apportionment just explained is followed far more gene ally than any other. Thus, Maine distributes her state funds, from whatev

[1] Ohio and possibly other states offer some minor exceptions.

source derived, to the towns according to the number of children betwe the ages of four and twenty-one. Connecticut distributes the annu income of her permanent fund, and the proceeds of the tax of $1. for every child between the ages of four and sixteen, according to tl number of children between those ages. Pennsylvania apportions h state tax of $5,500,000 annually, Ohio the proceeds of her one-mill ta Michigan so much of her specific tax as goes to schools, and Indiana ar Kentucky the proceeds of their state school taxes, according to the san general rule.

But other rules are followed. Vermont apportions her state tax to tl towns, cities, and unorganized districts according to the number of leg schools maintained during the preceding school year. New Hampshi distributes her state funds to the towns according to the number of pup returned as attending school not less than two weeks in the year. So mu of the Massachusetts permanent fund as goes directly to the schools apportioned to the towns of the state that have a property valuation of le than $3,000,000, towns ranking above that line receiving nothing. Fu thermore, the scale is so adjusted that the poorer the town the larger tl amount that it receives. Towns whose valuation does not exceed $500,0(receive $275 each; those exceeding $500,000 and not exceeding $1,000,0(receive $200; those exceeding $1,000,000 and not exceeding $2,000,00 $100, and those above the last amount and not above $3,000,000, $5 Again, a portion of the state fund is divided among the towns that a eligible on the basis of the ratio that the town's school tax bears to tl whole town tax; the larger the ratio the more help it receives. Rho(Island distributes her annual state contribution of $120,000 as follow: first, $100 is assigned to every school, not exceeding fifteen in number, a township; then the remainder is distributed to the towns proportional to the number of children from five to fifteen years of age inclusive.

The state school moneys of New York are apportioned in a comp cated manner. The state superintendent first sets aside the annual salari of the school commissioners (district superintendents). Next he sets apa to every city, incorporated village having a population of 5,000 ar upwards, and every union free-school district having a like populatio which employ a competent superintendent of schools, $800; and to citi having more than one member of assembly in the state legislature, $5(for each additional member, to be expended according to law for the su port of the public schools. He then sets apart any money that may ha been appropriated by the legislature for library purposes, and $6,000 f a contingent fund. Next he sets aside to the Indians on reservations, f their schools, a sum equal to their proportion of the state school mone *on the basis of distribution* established by law. These sums set aside, tl *remainder of the state* moneys is divided into two equal parts. The sup

intendent now apportions to every district in the state $100 (called a "tributive portion" or "district quota"), provided it has maintaine school, taught by a single qualified teacher or succession of such teac for the legal term of the preceding school year; and the same sum ever y additional qualified teacher or succession of such teachers, co unting monitors. The school year is 160 days, not including holi that occur during the time, or Saturdays. This apportionment made, su perintendent divides the remainder of the school moneys among co unties according to their respective population as determined by last preceding United States census, excluding Indians on reservati But cities that have special school laws receive their due share sepa and apart from the remainder of the counties in which they are situa

The New Jersey state school tax, equal to $5 for each child in state between the ages of five and eighteen, is raised by the several co ties according to their amounts of taxable property respectively, as sh by the tax rolls of the townships and wards of the counties. Ten per c of this tax, when it is paid into the treasury, is known as a *reserve fi* and is apportioned among the counties by the state board of educa "equitably and justly, according to their own discretion." The 90 cent. remaining is then divided among the counties in the propor that they have contributed to the tax. When the state school mo reach the counties they, together with all other school funds in the todY of the county, are distributed to the townships and cities on follow ing basis: (1) $200 for each teacher employed in the public sch for the full term for which the schools are maintained during the next preceding (nine months); (2) the remainder according to the last p lished school census (children from five to eighteen years of age), *provi* that no district shall receive less than $275, and that districts with fi five children or more shall not receive less than $375. If these funds not sufficient to maintain a free school nine months in the year, then inhabitants may raise by a district tax such additional amount as is nee for that purpose.

The local one-mill tax levied by Minnesota is expended within distr icts where it is raised. It is, therefore, only a compulsory district the same as in Michigan. The current school fund of the same st whi ch includes the income of the permanent fund, is distributed on ba sis of the number of pupils who have attended school forty day mo re in districts that have had school for five months or more during ye ar. In addition to the above apportionment, graded schools ha no t less than three departments, which come up to certain requireme re ceive aid from the state to the amount of $200 each. Besides, t ar e eighty-five high schools that receive state aid to the amount of $ ea ch. The grants to these *graded schools* and high schools are paid

permanent appropriations that are met by general taxation, and are apportioned by the state high-school board, on evidence that the schools are complying with the requirements. Minnesota also gives the sum of $500 annually to state high schools providing elementary normal instruction of a kind that satisfies the high-school board. Wisconsin also has an approved high-school list, one-half the cost of maintaining these schools being paid from the state treasury. Moreover, Wisconsin pays $250 each to certain approved high schools in which manual training is taught.

The California system of school finance is a unique system. The state superintendent apportions to the counties the state school fund according to their respective numbers of school-census children (from five to seventeen, certain classes being excluded). Each county superintendent first ascertains the number of teachers every district in the county is entitled to on the basis of one teacher for every seventy school-census children, or fraction thereof not less than twenty, as shown by the next preceding school census, and then the number to which the county is entitled by adding these district numbers together. He then calculates the amount of money to be raised at the legal rate of $500 a teacher. From this amount he deducts the quota of the state fund assigned to the county, and the remainder is the minimum amount of the county school fund to be raised by taxation for the ensuing year, *provided:* that the minimum of such fund shall not be less than $6 for every census child. The county fund thus made up is then distributed to the districts in accordance with this rule, *viz.*, $500 for every teacher, except (1) that to districts having less than twenty census children only $400 is assigned, and (2) that to districts having more than seventy census children $20 additional for every such child less than twenty in number shall be allowed. All school moneys remaining in the treasury after this apportionment has been made are then divided among the districts of the county in proportion to the average daily attendance upon each district during the preceding school year. District taxes may also be raised, subject to certain legal conditions (*Appendix C*).

The subcommittee does not feel called upon to deal with all the states, or even with all the peculiar modes of distributing school moneys. It believes that the enumeration of particulars now made is ample for the present purpose. Some remarks upon the leading rules or methods of distribution are, however, called for.

1. Distribution according to the school census or enumeration is open to a serious objection, *viz.*, it does not carry the money where it is most needed. For example, two districts lie side by side, one having twenty and the other forty youths of school age; the second district draws twice as much money as the other, but the cost of keeping up the two schools *is practically the same.* The same would be true of two township units,

unless the schools were consolidated. The result is that the distri township that needs the most help receives the least. The rule is si and easily worked, but it tends partially to defeat the end of sta county aid.

2. The same objection holds against rules based on the school e ment or on attendance, only with somewhat diminished force. Aga the enrollment is followed, or attendance for a brief time, there is d that some children will go to school long enough to be counted, and drop out. Besides, such rules of distribution work in favor of the g schools and against the rural schools, on account of their larger enroll and more regular attendance.

3. Taking everything into account, the subcommittee is inclin think that a fixed sum or sums, based on an arbitrary unit or un most equitable. Examples of such rules are furnished by the stat Massachusetts, Rhode Island, New York, New Jersey, and Calif The most serious objection to such rules is that they are necessarily plicated; some of those given above are quite complicated. Then, fixed sum is so much a teacher, as in New York, or so much a distri in Rhode Island and New Jersey, there is a temptation to the undue tiplication of schools or teachers. But this point can be safeguarde fixing statutory limitations, as in California. No rule can be devise will not be open to objection. The subcommittee does not beli possible to invent any rule of distribution that will well accomplis purpose of taxing large units for the benefit of small ones, unless it on the school or the teacher as a unit, with the necessary qualifica The Massachusetts rule is open to the objection that the school nee towns cannot always be measured by low valuations of property ass for taxation, as the number of pupils to be educated is also a facto the method of distribution now recommended is objected to a exclusive one, then it may be supplemented by basing a part o appropriation on the school census, enrollment, or attendance. resort to the United States census is most objectionable, as great ch of population occur in the course of ten years.

The difference in the working of the school-census method an fixed-sum method of distribution is well shown by comparing the s tics of two states. For the fiscal year ending November 15, 189 mill tax of Ohio produced $1,720,922. Of the eighty-eight co forty paid more into the fund than they received from it, while forty- paid less than they received. Some of the major counties of the received more from the fund than they paid into it, while minor co paid more than they received. For the year 1896 the city of Clev actually received $2,616.67 more from the state than it paid to the Assuredly, a rule that makes the agricultural counties of Ohio, or m

them, contribute to the education of Cleveland, the most populous city in the state, is a travesty of common sense. But the same year Cincinnati paid in round numbers $70,000 more than it received. This is hardly better than repealing the mill tax outright, and letting the burden of education fall directly upon the cities and townships. On the other hand, the state of New York, in 1896, paid a total general school tax of $4,062,903, of which $3,500,000 was immediately distributed to the counties again. Fifty-four of the sixty counties received more from this tax than they contributed to it; only six counties paid more than they received. Erie county paid $241,597 and received $185,460; while the corresponding figures for Kings and New York counties were $503,603 and $387,879, and $1,884,584 and $636,133, respectively. The New York rule *does* bring the strong to the help of the weak.

A question arises in respect to separate funds for buildings, the payment of teachers, and incidental expenses. In the opinion of the subcommittee such division is desirable. The need of providing new buildings is often made an excuse by boards of education for keeping down the salaries of teachers. The triple fund would not indeed prevent such injustice, which makes teachers as such contribute to buildings, but it would *tend* in that direction. It is often stipulated in school laws that state funds apportioned to communities shall be wholly applied to the payment of teachers. This is a wholesome regulation. The cost of grounds, buildings, and incidental expenses should be met by local taxes or other local funds. Touching the division of the cost of public education, State Superintendent Stetson of Maine, in a private communication, thus defines the prospective policy of that state: "Local communities shall provide school lots and school buildings, and keep the same in repair. Two-thirds of the money raised for maintaining schools shall come from the state, and one-third from the local communities. The apportionment of the money to the several municipalities shall be upon the basis of average attendance. We shall also try to get a law prohibiting towns from receiving state aid, if they maintain schools having less than a certain average attendance." Such a law as this would serve to prevent the undue multiplication of districts, and would even work a certain measure of consolidation.

The distribution of taxes levied on railroads, telegraphs, long-distance telephone lines, express companies, and the like, is an important question. In some states, as New York, Texas, and Ohio, school taxes levied on railroads inure to the exclusive benefit of the districts or townships through which the tracks run, excluding any state tax that may be levied on such property. This rule the subcommittee regards as unjust. The location of railroads is determined largely by physical conditions, and the mere fact that a line happens to run through its territory, where

probably not a dollar of the stock or bonds is owned, is no reason wh district or township should profit thereby to the exclusion of other a less fortunate districts or townships. In Pennsylvania the taxes railroads are paid into the state treasury and are distributed by legislature along with other revenues, the public schools, normal scho and colleges being included among the objects of the appropriati California has a similar provision. The mode of distributing Michigan specific tax has already been described. It is believed t such revenues as the foregoing should inure to the common benefit the state; but what is here said, let it be remarked, in no way rel to pending controversies about the taxation of railroads or other sim property.

The Nebraska law contains one excellent feature that is worth mention. All public high schools in the state that, as determined by State Department of Education, have a proper equipment of teach appliances, and course of study, are open to attendance by any perso school age residing outside the district who is a resident of the state whose education cannot be profitably carried on in the public school the district of his residence. Such pupil must have a certificate sig by the county superintendent that he has completed the common-sch course prescribed by the state department for work below the high sch He must attend at the high school nearest to his residence or at a h school of approved grade in the county of his residence. Any sch board that furnishes high-school instruction to such pupil is authori to charge fifty cents a week for the time that he has been in attenda and it is made the duty of the county board to pay all such bills out of county school fund. Massachusetts and Ohio, and perhaps other s also, provide for educating qualified pupils in high schools in other p than those where they reside, provided there are no home school them to attend, and this without cost to themselves. As Massachus the only state that makes the provision of high schools compulsory any circumstances, it may be well to mention the principal features state law in regard to that subject. Every town having a popula 4,000 persons or 500 families is obliged to maintain a high sch grade of the school depending somewhat upon the fact whether it larger or the smaller population. Pupils living in towns that required to maintain a high school can attend any neighbori school that will receive them. In such cases the state pays the t the pupil, provided the valuation of the town in which he resi not exceed $500,000; if the valuation does exceed that amount pays the tuition. High-school tuition is, therefore, wholly fre qualified *pupil in the state.*

ORGANIZATION.

The subcommittee is not here interested in the subject of school organization further than it relates to school maintenance. Its relations to teaching, supervision, and studies are topics belonging to other divisions of the general report. The statement and enforcement of two propositions will answer the present purpose.

I. The first proposition is that the township-unit system is far superior to the district system, and should be substituted, if practicable, for that system wherever it exists. The superiority of the town or township as an administrative unit is as great as its superiority as a taxing unit. The principal advantages are the following:

1. If the schools of a township are under a single board elected from the township at large, schoolhouses will far more likely be built where they are needed than under the other system.

2. Equality of school provision will be much more fully secured in respect to schoolhouses and grounds, length of school terms, and the ability and character of teachers.

3. The tendency will not be to multiply schools unduly, but to restrict their number, bringing together more scholars, and thus making better classification, grading, and teaching possible, and increasing the interest and enthusiasm of the pupils.

4. Better supervision can be secured. The county superintendent can deal more effectively and easily with one board in a township than with six, ten, or twelve; while township and township-union supervision will be greatly promoted.

5. Simplicity and economy of administration will be facilitated, and the sense of official responsibility be enhanced.

6. The tendency will be to employ teachers for longer terms, and thereby to restrict, in a considerable degree, the evils that flow from frequent changes. On this point the statistics of Mr. Gass, presented in this report, may be mentioned.

7. The strifes and contentions between districts that are now not infrequent will be prevented.

8. Transfers of pupils from school to school will be made more easy.

9. The reason last to be mentioned is perhaps the strongest of all. The relations of the township-unit system to school consolidation have already been suggested. The township system does not necessitate such consolidation, although it is likely to work that way; but consolidation is almost wholly dependent upon that system: schools *will not* be consolidated in great numbers if a plurality of district school boards have to *do the work.*

The subcommittee has stated that the adoption of the township-unit system *will be* followed by the reforms that have been mentioned. It is not,

indeed, meant that such will be the unvarying result; there will be excep tions — perhaps many exceptions — when the whole country is considered but the tendency *will be* strong in the directions named, or such *will* the general character of the result. Not only is this the suggestion c common sense, but it is the teaching of experience as well (*Appendix E*

The town-unit school system was the ancient system of New Englanc The classic school law enacted by the General Court of Massachusetts i 1648 ordered that the towns should found schools on their reaching a cer tain number of householders, the teachers to be paid either by the parent of such children as resorted to them for instruction or by the inhabitant in general by way of supply, as those who ordered the prudentials of th town should appoint. The word "township" is also used in the law. Con necticut followed the example of Massachusetts. The original New Eng land town, which was a small concentration of population, was we adapted to this system. But "as the population of each little nucleus c settlement spread itself out from the center of the original 'plantation,' early became convenient, in Massachusetts and Connecticut at least, t allow neighboring families at a distance from the local concentration, c nucleus, to form themselves into a school district." The original churc parishes were divided in the same way. If these districts had bee founded merely for the purpose of school supply, or to regulate attenc ance, there would have been, under the conditions existing, no objectio to their formation, but the contrary. Unfortunately, however, these ne districts also became units of school maintenance, bodies corporate an politic. These districts appear at first to have existed by sufferance merely but the celebrated school law of 1789 legalized them, thus paving the wa for the general introduction of the new system. Horace Mann declare in his Tenth Annual Report: "I consider the law of 1789 . . . . autho izing towns to divide themselves into districts the most unfortunate la on the subject of common schools ever enacted in the state." Still th "act was not repealed until manufacturing had restored those concen trations of population which in the early colonies had invited townshi control of school affairs." This was finally done. Mr. Mann in the sam report (p. 37) bore this testimony to the superiority of the town system

"As a general fact, the schools of undistricted towns are greatly supe rior to those in districted towns — and for obvious reasons. The firs class of towns — the undistricted — provide all the schoolhouses, and through the agency of the school committee, employ all the teachers. one good schoolhouse is provided for any section of the town, all th other sections, having contributed their respective portions of the expens to erect the good house, will demand one equally good for themselves and the equity of such a demand is so obvious that it cannot be resisted If, on the other hand, each section were a separate district, and bound to

the whole expense of a new house if it should erect one, it would be tempted to continue an old house long after it had ceased to be comfortable, and, indeed, as experience has too often sadly proved, long after it ceased to be tenantable. So, too, in undistricted towns we never see the painful, anti-republican contrast of one school, in one section, kept all the year round by a teacher who receives $100 a month, while, in another section of the same town, the school is kept on the minimum principle, both as to time and price, and, of course, yielding only a minimum amount of benefit—to say nothing of probable and irremediable evils that it may inflict. In regard to supervision, also, if the school committee is responsible for the condition of all the schools, it is constrained to visit all alike, to care for all alike, and, as far as possible, to aim in all at the production of equal results; because any partiality or favoritism will be rebuked at the ballot box. In undistricted towns, therefore, three grand conditions of a prosperous school, *viz.*, a good house, a good teacher, and vigilant superintendence, are secured by motives which do not operate, or operate to a very limited extent, in districted towns. Under the non-districting system it is obvious that each section of a town will demand at least an equal degree of accommodation in the house, of talent in the teacher, and of attention in the committee; and should any selfish feelings be indulged it is some consolation to reflect that they, too, will be harnessed to the car of improvement."

The district system was at one time universal, and it exists in some form in a great majority of the states today. In Maine, New Hampshire, Massachusetts, and New Jersey it has been wholly swept away. In Connecticut and Rhode Island the town system is permissive, and exists side by side with the district system. The township system exists in Pennsylvania, Ohio, and Indiana. It is permissive in the upper peninsula of Michigan, in Wisconsin, and in Minnesota, and doubtless in other states. It varies somewhat in the organization of the local authority. The Massachusetts school committee consists of three members or a multiple of three, elected from the town at large. In New Jersey the board consists of three, five, or nine members, as the town may elect. The Ohio board consists of delegates or representatives elected by the sub-districts, one each. A single trustee elected by the people manages the schools of a township in Indiana, except that he is assisted by a director in each attendance district who looks after incidental local matters.

Considering the great superiority of the township system over the district system, it is not a little strange that its introduction in the room of its competitor should have been so steadily resisted as it has been. This opposition is due in part to the power of conservative habit, in part to the belief that the district system is more democratic, and in part to the

popular fondness for office holding, all conjoined with much misco
tion and ignorance in respect to the merits of the two systems. I
also been urged in favor of the district, by politicians, that it is the
unit for canvassing the states for political purposes. Certainly it c
be objected to the township system, in its pure form, that it is not
ciently democratic. In 1875 there were 15,087 teachers employ
teaching the common schools of Ohio, and there were in the state a
same time more than 35,000 school directors and members of boar
education charged with the administration of the schools. This,
edly, is an excess of democracy.

The "community" system is much worse than the district systen
fortunately it is confined to a single state. The Texas law permits
ents, guardians, or other persons having control of children of scho
age, residing in any one of the so-called "community" counties (thirt
in number out of a total of 250), to unite and organize themselves i
free-school community entitled to the benefits of the available s
fund belonging to the county, upon complying with certain presc
conditions. The persons so uniting and organizing first address a
tion to the county judge, who is *ex-officio* county superintende
schools, duly signed by the petitioners, setting forth that the comm
is white or black, as the case may be, giving an alphabetical list c
names of children of scholastic age within the limits proposed, descr
the capacity of the schoolhouse and the character of the other cor
ences that the petitioners have to offer, naming persons to act as tru
etc. The matter then passes into the hands of the judge, who h
discretionary power in the premises. He may not even throw aside
a petition either because it is signed by few persons or because the a
betical list carries few names. The law does not fix any minimum
ber in either case. If the people of a neighborhood desire a scho
matter how few they may be, a school the judge must grant them.
"community" is a voluntary district in the strict sense of the term, h
legal existence for one year only, and having no authority to levy a
school tax, and the evils that attend it are far greater than thos
call so loudly for the abolition of the district system wherever t
practicable. The people of Texas can, however, congratulate t
selves that the "community" school, which plainly originated in pi
society, has lost ground in later years.

In the South, and in those western states that have the county s
of local government, the only practical alternative to the district s
of school organization is a county system. It must be remembered
in these states the town or township does not exist. Fortunately, s
system is not altogether unknown. In a few counties of Georgia i
been in successful operation for a number of years. These are the

cipal features of the system as it exists in Richmond county, in which the city of Augusta is situated:

The county is the unit area of organization, and the rural parts and the urban parts of the county district, as far as practicable, are treated just alike. A board of education, composed of representatives elected by the people of the county for the term of three years, one-third retiring each year, manages all the schools. The school tax is levied at a uniform rate upon all the property of the county, without revision by any other authority and without any limit as to rate or amount. The county and state funds are distributed to the schools according to the number of children to be educated. There is no district tax. The same qualifications are required for country and for city teachers. The teachers are treated as nearly alike as the conditions admit, and they are paid about the same salaries. The schools are in session the same length of time in a year, nine calendar months. The country schoolhouses, on the average, are situated four miles apart, and no child is out of walking distance of a school open nine months in the year, and taught by a good teacher. One superintendent has charge of all the schools. Augusta has nine-tenths of the taxable property of the county, but only three-fourths of the school population. In other words, the rural parts of the county pay one-tenth of the school tax and receive the benefit of one-fourth of it. For the most part, these are excellent provisions. The county would seem to be the natural area unit for popular schools under the county system of local government. The subcommittee confidently believes that this mode of school organization has a great future before it in the United States (*Appendix D*).

II. In those parts of the country where existing physical and social conditions render it practicable there should be such a consolidation of rural schools as will diminish the existing number of schools, schoolhouses, and teachers, and bring together, at advantageous points, the pupils who are now divided and scattered among the isolated schools of the township or other similar district. This step should be taken in the interest of good education as well as of public economy. To make this reform possible the children, as far as may be necessary or practicable, must be conveyed to and from the schoolhouses at public expense.

How absolutely fatal to good schools the existing conditions are in many parts of the country statistics show most conclusively. State Superintendent Wells of Wisconsin reported in 1894 that his state had 183 districts whose average attendance the previous year was not more than five each; that 858 others were not above ten each; while 2,481 more did not *exceed twenty* each. "In other words," he said, "3,522 country districts, *about three-fifths of* the total number, have an average attendance not *exceeding twenty*, and about two-fifths above that average, with the great

majority near the lower margin."[1] Mr. H. R. Gass, of Michigan, citin the state report for his authority, states in a published paper that in 18 the country schools of Calhoun county in that state required 158 teache and that they employed 342 different ones in the course of the yea The average length of the school in the district was 8.4 months, whi the average term for which the teachers were employed was but 3.8 month He cites a second county that presents like statistics, and then observe "The ratio of the number [of teachers] required to the number employe is about the same as this throughout the state, the tenure being longer i the newer than in the older counties." This state of things Mr. Ga attributes to the prevalence of the district system. He refers to Mass chusetts and Indiana, where changes of teachers are much less freque and teachers' tenures much longer than in Michigan. While two teache on an average were employed in Michigan for a school every year, but fe schools in the other states employed more than one. In the same state, the present time, there are over 1,000 districts that enumerate less tha twenty-five children of school age each, while seventy counties contai 468 districts that enumerate less than fifteen each. The statistics at han do not show the actual size of the schools. Nor are the small schoo found in the newer and poorer parts of the state only; the oldest an richest counties have their fair share of them. In fact, the newer parts a state often have the largest and best schools. Not only so, the olde and most densely populated states frequently make a very poor showin In 1894–95 there were 7,529 school districts in New York, in each which the average attendance upon school during the year varied from or to twenty pupils, while the average daily attendance in each of 2,983 di tricts was less than ten pupils (*Appendix I*). In 1893 Vermont had 1 schools of six pupils or less each. In 1892 State Superintendent Luce Maine reported that the average enrollment in the schools of that state f the previous year was less than twenty-five pupils to a school, and that t number of districts having less than twenty-five was larger than the nun ber having more. He declared that there were probably between 1,oc and 1,200 existing schools in the state whose enrollment was twelve or les and that 600 or 800 schools then existing could be abolished witho detriment.[2] Twenty-five years ago a large number of schools on t Western Reserve, Ohio, long famed for schools, had dwindled to the mo insignificant size. Still other statistics of similar import will be found i the report of the Subcommittee on Instruction and Discipline. Atte tion is drawn particularly to those relating to Rhode Island and Mass chusetts.

[1] "The Township System of School Government." Madison, 1894.

[2] Quoted by Mr. Gass. See "Transactions of the Michigan State Teachers' Associ tion, 1887."

But it is needless to multiply statistics, or to insist at length that thousands of rural schools furnish their pupils with a miserable preparation for the duties of life. When we consider the various elements that enter into good education, and especially training for social activities, it is not too much to say that a very small school is almost necessarily a very poor school. The facts are notorious. Hitherto it has been supposed that, although the cities and towns surpassed the rural districts in higher education, the rural districts contained a smaller proportion of illiterate persons. This has been the prevailing view in the northern states, and probably it was once in accord with the facts. The cities have been considered the great hives of illiteracy. But there is now grave reason to question whether the fact is not often the other way. Certainly it is so in the only state where, so far as the subcommittee is informed, the subject has been statistically investigated.[1] But however this may be, a remedy for the unsatisfactory state of the rural schools is one of the pressing needs of the day. What can be done? One thing that can be done is to consolidate many of the small schools by carrying back and forth such pupils as need to be carried, and thus, by one stroke, create several of the conditions of good schools. The interest that this subject is beginning to awaken is one of the hopeful signs of the times.

It was Massachusetts that led the way in developing the district system, and it is Massachusetts that is leading the way in consolidation. An act that dates from 1869 authorizes any town in the commonwealth to raise money by taxation to enable the school committee, in its discretion, to provide for the conveyance of pupils to and from the public schools at public cost. The towns were already empowered to build schoolhouses wherever they were really needed. Availing themselves of these powers,

[1] The state referred to is Michigan. According to the state census of 1894 the ratios of the foreign-born persons in the cities of the state, ten years of age or more, unable to read and write, and in the state at large, were practically the same, eighty-four in 1,000. But the ratios of the native-born in the cities, in the state at large, and therefore in the country districts, were quite different. In the cities it was fourteen in 1,000; in the state at large, twenty-one in 1,000; in the country, twenty-four in 1,000. For every fourteen persons ten years of age or upwards in the cities unable to read and write there were twenty-four in the country; that is, the ratio in the country is 70 per cent. greater than that in the cities. If the country rate of illiteracy could be reduced to the city rate, the number of illiterates of the native-born population ten years of age and upwards unable to read and write would be reduced about 8,000. Several facts, no doubt, enter into the explanation of the greater illiteracy of the country districts, but the most important of them is the inferiority of the country schools. It does not explain matters to say that Michigan is comparatively a new state, that much of it is thinly settled, that it contains large lumbering and mining districts, etc. The fact is that in the oldest and wealthiest parts of Michigan the cities, as a rule, surpass the counties in which they are situated in respect to *popular intelligence.* The city of Detroit ranks distinctly higher than Wayne county, *and the same may be said of* the cities of Grand Rapids and Ann Arbor as compared with *Kent and Washtenaw counties.* The counties named contain the cities mentioned.

many towns have entered upon the work of consolidating their schools. How the work goes on is shown by the following table exhibiting the sums of money paid for public-school transportation for a series of years.

Year	Amount	Year	Amount
1888, 1889	$22,118.38	1892, 1893	$50,560.41
1889, 1890	24,145.12	1893, 1894	63,617.68
1890, 1891	30,648.68	1894, 1895	76,608.29
1891, 1892	38,726.07	1895, 1896	91,136.11

The movement has extended beyond Massachusetts and reached every one of the New England states. In these states many hundreds of schools have been consolidated, and with the most gratifying results. Occasionally an unsuccessful experiment is reported, but the great stream of testimony runs strongly the other way. Longer school terms, better teachers, better grading, better instruction, more interest in the pupils, greater physical comfort on the part of the children, better supervision — these are the claims that are made for the new departure (*Appendices E* and *F*). Other things being equal, the new way is never more expensive than the old one, and often it is less expensive.

The movement has spread beyond New England. In 1894 a law was enacted in New Jersey providing for the transportation of pupils at public expense in order that rural schools might be consolidated with city ones. A most interesting experiment in consolidation is being tried in northeastern Ohio, where some schools had already died out, and many more were lingering on the verge of death. Permissive legislation has been obtained in several counties, and already many townships are working the plan successfully, while many others are looking on expectantly and are apparently on the point of making the new departure. The newspapers are quick to note the innovation, and it is already attracting attention beyond the borders of the state (*Appendix F*).

The distinct pedagogical advantages of consolidation are much more fully set forth in the reports on supply of teachers and instruction and discipline than here. In this report the topic is dealt with mainly as it is related to organization and administration. The fact is, however, the several aspects of consolidation are inseparably connected. As a rule, whatever promotes simplicity and ease of administration promotes good instruction, and *vice versa*. No one of the subcommittees that handle the subject for a moment supposes that there is any charm in the word "consolidation" to cast all the evil spirits out of the rural school, but they all believe, after giving the subject mature consideration, that great possibilities of improvement lie in that direction. It is perfectly true that the consolidation remedy cannot be universally applied, because physical and

social conditions often forbid. The fact is, that a large proportion of the children of the land will be schooled in little schools—rural schools, ungraded schools—or they will not be schooled at all. Suggestions looking to the improvement of these schools will be found in the reports of all the subcommittees; but insistence is here placed upon the fact that the consolidation remedy can be applied on a grand scale, with the largest promise of success. In most states some new legislation will be necessary to that end, but not in all. Wherever the township-unit system exists, the first step, and the long step, has already been taken. In such states it should not be difficult to secure the needed legislation in relation to transportation. State Superintendent Emery of Wisconsin has already notified the people of his state that the laws contain all the provisions that are necessary to enable them to move at once in the direction of school consolidation.

It is important that the consolidation reform shall not be misunderstood. It does not necessarily mean that there shall be only one school in a town or township. It does not mean either that parts of different townships or counties shall not be comprised in one school. These questions are merely matters of detail, and their adjustment will depend upon such factors as the size of townships, the distribution of villages or other local centers, the direction and condition of roads, streams, and bridges, the distribution of population, and the physical configuration of the township and the adjacent parts of the country.

It is noteworthy how the different phases of educational reform all tend to hold together. In the northern states the cause of school consolidation depends intimately upon the adoption of the township-unit system. A certain amount of consolidation can be effected by the abolition of small districts; it may be possible, also, for several independent districts to merge their schools into one, for the time at least, and still preserve their independence; but it is manifest that the first plan will not prove effectual, and that the second one will be infrequent and precarious. The subcommittee believes confidently, therefore, that the fortune of effectual consolidation is closely bound up with the fortune of the township-unit system.

It is also noteworthy, let it be remarked again, how different social elements tend to attract one another and so to coalesce. School consolidation, especially its practicability, turns largely upon means of cheap, safe, and easy communication throughout the school area. Here we touch a question intimately relating to social progress that has been receiving increasing attention the last few years. Reference is made to the improvement of roads. Those who have been promoting this movement have not probably regarded it as a measure of educational reform; but *such it is.* Perhaps there is no rural interest of a social nature that

would be more decidedly enhanced by good roads than the educational interest. The people of some of the towns of Ohio, where the new plan is being tried, claim this as a decided advantage, that the drivers of the omnibuses serve as carriers for the mails between the farmhouses and the post offices, thus promoting the diffusion of intelligence in still another way.

Only a single point remains to be pressed, but it must be pressed strongly. This is the necessity of lengthening materially the time that the country schools, on the average, are in session each year, and the securing of a more regular attendance of the pupils. The legal years now vary widely in different states, and the practical, or real, years still more widely. Some communities always surpass the legal minimum of time, others as regularly fall below it. In the thickly settled states of the East the rural schools are in session eight, nine, or ten months in the year; but often in the South, and sometimes in the West, one-half the shortest of these terms is not reached. The legal year is frequently absurdly short. Until two years ago the Michigan year was but three months, and now it is but five months. It is quite unnecessary to argue that short schools are, even relatively, poor schools. In order to have a good school, it is necessary not only to bring pupils together in considerable numbers, but also to hold them to the work a certain number of hours each day, and a certain number of days each year. There must be a concentration of effort as of pupils. It is as wasteful a method of education to send children to school seventy or eighty days in the year as it is to send them two or three hours in the day. Persons interested in popular education, and particularly in rural education, should not rest, therefore, in their efforts until they have made the legal school year in every state at least 160 or 180 days.

But it will not be enough for the state simply to fix a minimum school year: it must see to the enforcement of the law. The law should hold communities to a rigid accountability in respect to maintaining schools of legal grade for the full legal period, to employing none but certificated teachers, and making all the required reports to the state educational department. Most school laws contain such provisions as these, but it is feared that they are not always enforced. The only practicable mode of enforcement is absolutely to withhold from the local organizations all aid from the superior taxing units, as the state, until they first observe the law.

And again, it will not suffice for the state to see that the prescribed quality of instruction is actually furnished. It might, perhaps, be thought that if the state only provided local schools, and made them free, the people would be only too glad to avail themselves of them to the full; but sad experience shows that this is not always the case. The

indifference, ignorance, and selfishness of some parents come between their children and the schools. In communities where the school attendance is compulsory some parents are in an almost constant battle with the authorities, to keep their children out of the school as much as possible. It is possible that such extreme indifference or selfishness as this is more common in cities than in the country; and yet it is true, as a rule, that the country child's labor, especially the farm boy's labor, has a greater money value than the city child's labor, and that the farmer is, therefore, under a special temptation to keep his boys out of school. On the whole, there is quite as much need of an efficient compulsory attendance law in the country as in the city, and perhaps more.

The subcommittee has not taken space to discuss, in general, the common education that the American states are now furnishing the American people. That is a large subject, and for the most part lies outside the field of the present inquiry. It will suffice to say on this large question that the people had better pay what they do pay for what they get than to go without it, or even twice, thrice, or four times the sum; but, at the same time, they might receive, and should receive, a great deal more for their money than at present. This is particularly true of the rural schools. No doubt there are many excellent schools in the country; but, on the whole, it may well be doubted whether any money that is expended in the people's interest is expended more wastefully than what goes to the country schools. No doubt the country school has points of advantage over the city school, as the freer communion with nature, but on the whole it is inferior. The typical "little red schoolhouse," so invested with sentiment, is a costly and unsatisfactory institution of education. Owing to social changes, in many parts of the country it is much less efficient and useful, at least relatively, than once it was, and a new organization is imperatively called for. Something should be done to stop the wasteful expenditure of the public money. State Superintendent Stetson, speaking for his state, puts the case thus in a communication to the subcommittee:

"I have devoted quite a number of pages in my report [1895] to showing the people of Maine that we are wasting an enormous sum of money in this state because of the unbusinesslike methods which are used in the expenditure of its school funds. This waste is made in every direction in which money is spent. We pay more than we need to for school lots, the erection of school buildings, the furnishing of school appliances, text-books, fuel, making repairs, etc., etc. The waste along these lines aggregates more than one-third of a million of dollars each year. I have shown in the report that the money which we spend for *common schools is* sufficient to maintain schools taught by professionally *trained teachers, and* superintended by competent superintendents; that,

in addition to doing these two important things, we would have mone enough left to supply them with the appliances necessary for a successfu school, and also furnish the needed apparatus, library books, and mak all the needed repairs and additions. I feel that I have demonstrate this point so that there will be no further question about it in the stat of Maine. The whole matter turns upon the simple point that we ar alarmingly wasteful in our expenditure of school money.

"Personally I am in favor of local communities being responsible fo providing school buildings. I think two-thirds of the funds required fo the maintenance of the common schools should be furnished by the stat and that the other third should be raised by local taxation; that th state should examine all teachers and issue all licenses to teach; tha towns thus receiving state aid must employ teachers who hold such certifi cates. The state should inspect the school accounts of the towns recei ing state aid."

The subcommittee deems it advisable, now that the whole groun has been covered, to restate the fundamental propositions that have bee urged in this report. These all start from the one central postulate th a provision of funds sufficient for their adequate support is essential t the existence and life of good schools. The three-fold division of th subject will be preserved in the summary.

I. REVENUE.

1. The great resource of the public schools is, *and must continue to b* some form or forms of public taxation.

2. Such areas or units of taxation should be created, or continued already in existence, as will fully develop the sound American princip that the whole wealth of the state shall be made available for educatin all the youth of the state.

3. To accomplish this end, resort must be had to the larger uni of taxation, especially where population is sparse and wealth meage The following recommendations must be specifically urged: (1) a liber provision of funds from the state treasury; (2) a county tax in at least a the county-system states; (3) a town or township tax in the states whe this civil division exists; (4) taxes in special districts, that is, in cities ar villages. The school district, in the commonly accepted sense of th term, is not a desirable taxing unit, but quite the contrary, and should b abolished as such unit.

II. DISTRIBUTION.

1. Funds raised by the large political or social units for gener school purposes should be distributed in such a way as to bring the ri and the strong to the help of the poor and the weak.

2. Such rules of distribution should be adopted as will accompli

this end. In order to do this, distribution must be based, to a certain extent at least, upon fixed or arbitrary units; that is, so much money must be given to the school or to the teacher.

3. The large taxing units should render assistance to the small ones only upon the condition that the small ones first do something for themselves.

III. ORGANIZATION.

1. In the states where the town or mixed system of local government exists, the town- or township-school system should, as far as practicable, be substituted for the district system; in the county-system states the county-school system is the natural alternative to the district system.

2. In those parts of the country where existing physical and social conditions render it practicable, there should be such a consolidation of rural schools as will diminish the existing number of schools, school-houses, and teachers, and bring together, at advantageous points, the pupils who are now divided and scattered among the isolated schools of the township or other similar districts.

3. There is urgent need of lengthening materially the time that the country schools, on the average, are in session each year. The ideal should be a minimum school year in every state of at least 160 or 180 days.

The subcommittee does not expect to see, and does not desire to see, the school systems of the country all brought to one uniform pattern. It is too well aware of the great diversity of conditions that exist to think such a thing is possible. Even more, a certain variety, and so conflict, of systems is conducive to life, activity, and improvement. Neither is the subcommittee under any illusions as to what is possible, or probable, in a field of education so vast as that offered by the United States, with the great number of authorities, state and local. At the same time there are certain general laws governing successful school systems and schools that cannot be ignored. Some of the principal of these laws have been set forth above; and it is believed that their general recognition will be followed by a marked improvement of the common schools, and so of the popular education, of the country.

Some persons may ask, "How shall the principles laid down in this report be made practical?" "How shall they be established in communities or states where they do not exist, or exist only in part?" To these questions only a general answer is needed. The state legislature, the law-making authority, is the only source of power in relation to education, as well as in relation to all other branches of the state government. Accordingly, if the school law is defective and weak, the legislature must be called upon to repair and strengthen it. No progress can be made with-

out an efficient law and efficient school authorities. But how shall the legislature be induced to act in the premises? In precisely the same way that it is induced to act in other matters. Facts, arguments, persuasion, must be addressed to the members of the legislature. Above all it is important that the public mind shall be informed as fully as possible upon all branches of the subject. If the people generally knew how much better schools they *might* have than those that they *do* now have, and for no more cost, it is impossible to believe that they would not bestir themselves to effect reforms. The subcommittee marks out what it believes to be broad lines of educational progress. It enforces its views, as far as possible, with appropriate arguments. But it must necessarily leave the application of these views and arguments to the exigencies existing in particular communities or states to such persons, belonging to these communities or states, as are interested in the subject and are familiar with all the local facts and conditions.

B. A. HINSDALE, *Chairman*,
W. S. SUTTON,
S. T. BLACK.

REPORT OF THE SUBCOMMITTEE ON SUPERVISION.

The Subcommittee on Supervision of Rural Schools has taken into careful consideration the various topics submitted for investigation. Its inquiries have extended into all the states and territories except Indian Territory and Alaska, and the facts are based on returns more or less full from all parts of the country.

Professional supervision is today regarded as an essential factor in our school system. It has been observed that the schools that are closely supervised by men who thoroughly know their business at once respond to the influence of this supervision. Expert supervision has resulted in systematic, orderly, and well-directed instruction. It is a matter of remark that the most competent superintendents have the best schools, and that cities noted for their excellence in school work have attained this pre-eminence through the medium of intelligent supervision. This is also true of those counties which have come under the same influence.

"There is no other agency in our school system that has done so much for the improvement of our schools in organization, and in methods of instruction and discipline, as the superintendency."

The attention of the profession, however, has been mainly directed toward expert supervision in city schools, and but little heed has been paid to the demand for such work in rural districts. It is quite time

that our inquiries should be directed toward the character of the supervision demanded by the country school. If supervision through a competent superintendent is a good thing for city schools, there is every reason why it would be a good thing for rural schools.

STATE SUPERINTENDENT.

Although the state superintendent stands at the head of the public-school system of the state, his work is more closely related to rural than to city schools. As this report has reference only to the conditions of rural schools, your subcommittee will consider the duties of this officer as bearing upon that part alone of the general school system. No officer connected with the administration of state affairs requires higher or more essential qualifications than that of superintendent of public instruction. He should be a man of high moral character, well acquainted with approved methods and with the history and condition of education in his state. He should be in close touch with the educational spirit of the times, and should be one whom the profession regards as authority in all that constitutes excellence in school matters. It is also agreed that he should be an experienced teacher, of broad and thorough scholarship, and a good public speaker. With these qualifications there should be combined a large share of good common sense, and sufficient executive ability to manage the details of his office.

The legal term of office in Massachusetts and Rhode Island is one year. In Connecticut it is at the pleasure of the state board. In twenty states the term of office is two years; in four states, three years; in seventeen states, four years; but in no state does it exceed four years. The average length of term of the state superintendent is two years and ten months. The lowest salary paid is $1,000 and the highest $5,000 per year. The average salary is $2,475 per year. In answer to the question as to how much time the state superintendent devotes to supervision of schools, we had definite answers from thirty-seven states, in which we find that nineteen of these superintendents devote more than half of their time to visiting schools and traveling in the interest of education, and eighteen devote less than half their time. Quite a number of the state superintendents report that they divide their time equally between the office work and supervision. In only a few of the states does the state superintendent exercise no supervision, and in several the supervision is carried on through deputies or agents.

The state superintendent under present arrangements has but little time for personal inspection of school work. The superintendents in fourteen states visit each county once a year and in eight states once *every two years.* From the other states no definite information could be *obtained. Many* superintendents say, as often as practicable; in some

instances, not at all. Our information is to the effect that most state superintendents devote as much time to supervision as the spare, but that it is generally considered secondary to work of a c nature. There are undoubtedly in some states sections which have been visited by the state superintendent or his deputy.

By some means the influence of the state superintendent shou extended until it reaches every rural school in the state. In all pc ways the office should be made useful to the teachers and school of The rural schools need this stimulating, helpful influence more ever those of the city. While in most states the office has but little mor advisory powers, yet, through lectures at associations and throug inspection of institutes, the state superintendent ought to be able t vince the teachers of rural schools that he is in close sympathy with work.

The work of the state superintendent ought to be made more eff by so increasing his clerical force as to enable him to spend more ti direct contact with the schools and school officials of the state. careful compilation of statistics is very important, but it can be int to a skillful statistician, while much of the routine work of the offic be well done by clerks. The higher and by far the more importan of directing educational movements, of instructing the people, a creating public opinion and arousing public interest devolves upc state superintendent. There is a general demand for more assista his office, longer tenure of service, and more liberal financial su His work should be so related to that of the superintendents in th ous subdivisions of the state for school purposes that the whole m properly articulated, and the county or town superintendents be his direction and control. He should come in frequent contact with by conventions held for the purpose of instructing them in their ular duties, and should send them such circulars and letters as n necessary to aid and direct them in their work.

The state superintendent should have the power to withhold th appropriation from all counties or school districts not complying wi law in every particular, because he would then hold the key to the sit and could enforce his orders.

The main duties of the state superintendent are not only to or and direct educational influence and laws already existing, but also among the people in the spirit of Horace Mann, and, by public add by the liberal use of the press, and by securing the assistance of the ing men of the state, to arouse and keep alive an interest in the ca popular education. In connection with the rural schools especia state superintendent not only has great possibilities for a wise supe influence, *but also great opportunities* to arouse and instruct the p

In a majority of the states the most needful legislation is that which bears upon the organization and maintenance of rural schools, and a supply of competent teachers for the same. The state superintendent, therefore, should be a man able to secure the co-operation of the legislature for the enactment of proper statutes. This can be done only by one who sees clearly the great needs of the school system, and who is able to go before the people and the legislature and unite all influences to obtain the necessary legislation. While putting into this high office any person solely through his political affiliations is to be deprecated, the state superintendent should be a man who knows how to approach the leaders of all parties and convince them of the justice and soundness of his plans, viewed from the high vantage ground of the general good.

COUNTY, TOWNSHIP, OR DISTRICT, SUPERINTENDENT.

A still more important question opened for discussion is the character and degree of supervision below that of the state superintendent.[1] Thirty-eight states, mainly in the South and West, have county superintendents, whose duty it is to visit the schools and exercise the duties usually belonging to their office. The New England states generally have what is known as township or district supervision, which arises in large part from their political organization. In New England the town is the dominant political unit, while in the South and West it is the county. The simplicity and effectiveness of supervision is promoted when the units of political organization and of school administration are identical. This condition has its limitations, however, in the amount of territory to be covered and in the density of population, which is a varying quantity. The main point is to bring every rural school of the country as far as possible under the watchful care of a competent supervising officer. Responsibility is a strong stimulant. It is one of the weak points in our present system that too often the rural school-teacher is responsible to no one.

In regard to the operation of the two principal methods of supervision there is no reason why any section should abandon the practice which has been found best adapted to its peculiar conditions. It must be conceded, however, that a single township, containing on an average ten or twelve schools, is too small a territory to engage profitably the entire attention of one person. In such a case one of two things must necessarily happen: either the schools are supervised to the point of interference, or the supervision becomes uncertain, feeble, and unsatisfactory. In a general way, the rural township is too small a supervisory unit. Wherever it has been tried the supervisor has generally had some other busi-

[1] In this report the term supervisor is used to include also county superintendent, commissioner, or any other term by which the supervising officer of a county or supervisory district is usually designated.

ness to attend to, and thus his work has been found wanting in those results which are most desirable. In order that the work of overseeing and directing may be effective, it must engage the entire time and the best thought of the supervisory officer.

A proper remedy for this is the combination of towns for supervisory purposes. Three, four, or five towns could be united in one supervisory district, until a sufficient number of schools have been secured to engage the entire attention of one good man. The burden of his salary could be borne by these towns in the proportion of the number of schools they contribute to his work. This plan is in operation in Massachusetts, and has been satisfactory. A complete exposition of the Massachusetts plan of supervision of township schools is found in A. W. Edson's monograph, "Supervision of Schools in Massachusetts" (Boston, 1895).

In that state 253 of the towns are supervised by 155 supervisors. While some of the large towns can alone support a supervisor, several of the smaller ones must unite to secure the services of an efficient officer. In addition to what the towns do for themselves the state grants to those of low valuation, when they combine into a supervisory district, the sum of $750 to pay for a supervisor. These towns, however, are required to raise an additional sum equal to that furnished by the state, thus insuring a sufficient sum for the employment of an expert school man. By these means 93 per cent. of the children of Massachusetts have been brought under close supervision. The salary paid to a supervisor is at least $1,500 a year, and he is enabled to devote all his time to the work and to inspect each school once a month. It is true that there are still about 100 towns in Massachusetts without supervision, yet the feasibility of co-operative supervision with aid from the state is proven beyond all doubt.

"The state aid to a district amounts at present to $1,250—$750 towards the superintendent's salary and $500 towards the salaries of the teachers. The remainder of the superintendent's salary, $750, must be raised by the towns of the district. They are at liberty, of course, to raise more than $750 for the purpose, if they desire to do so" (Massachusetts State Report, 1895).

What has been said regarding the combination of towns for supervisory purposes can be repeated with equal emphasis as to other small divisions of territory termed "school districts." The same principle applies here as elsewhere, that the interests of the schools included in a given territory should be sufficient to warrant the employment of a thoroughly competent person, at such a salary as would justify devoting his entire time to his work. After all has been done, there will still be vast sections of country, especially in the West and Southwest, without any means of efficient supervision. No present remedy can be devised to aid them. It can be *safely left* for the several states, as population increases,

to look after the interests of the schools in the light of the experience of older communities about them.

The worth of the county superintendency is acknowledged, but in many cases the county is too large an area and contains too many teachers for one man to properly supervise. The county is as much too large a unit for supervisory purposes as the township is too small. This remark, however, does not apply to every county nor to any one state. In counties where the number of teachers is too large for one man to supervise, the county superintendent should have one or more assistants or deputies to aid him in his work. They should be directly responsible to him for the kind and character of their work, and should be charged solely with supervisory duties. The importance of having one superintendent for the county or district to whom other supervisors are responsible must be emphasized, as it would be an error and a fruitful source of strife if in any territory there should be two or more supervisors having concurrent jurisdiction.

THE COUNTY UNIT.

Since this report is a symposium of suggestions for supervising rural schools, it may not be amiss to discuss a plan of supervisory organization that has found favor in some few counties that contain large cities as well as a rural population. We mention it here because it has valuable features for supervising the rural schools. There is but one school board for the entire county. One set of men legislates for the whole area, and it is their duty to relate the urban and suburban and rural schools into a sympathetic system. This is based upon the idea that every city is bound to respect the people that immediately environ it. It is to the interest of a large city to have good roads leading to it, good crops in the fields around it, and good schools to which the farmers may send their children.

With this as a foundation principle there is but one school fund for the entire county, raised by taxation upon all property in the county, whether it be in or out of the city. This makes the general school fund, which is distributed upon the basis of school population and according to the needs of the city wards and the rural communities. The same qualification for teachers is required whether they teach in a city graded school or in a country ungraded school, and the same salary is paid to them and in the same way, and for just as long a term. In this system one superintendent is in charge of the whole area. He looks after a city graded school one day and the next day may be twenty miles away inspecting a country school. Expert supervision by a superintendent and his assistants is thus extended into the rural districts, and both city and country *school receive* the benefit of what there may be in each that is of real *value.*

Upon this plan, as a matter of course, a large portion of the school fund raised by taxation on city property is annually distributed to the country schools. The city is really made to assist in supporting the rural schools around it. And who shall say it is not a good thing for the city to do, especially in agricultural sections, in which the education, liberal and special, of the farmer's child is the probable salvation of the farming interests of the country. We should not lose sight of the truth that the farmer's child is to be made a useful citizen, not only content to stay in the home in which he was born and reared, if that is best, but fitted to fill honorably any station in life to which he may be called. To do this he must have all the opportunities of education and culture that the city affords. This can be brought about in no other way than at the city's expense, for wealth is massed in our populous centers. The expert supervision, the well-trained teacher, the long term, the modern text-book, the good schoolhouse, can be placed at the farmer's door by the agencies of the neighboring city, that owes him this and much more (*Appendix D*).

TRAINED TEACHERS NEEDED IN COUNTRY SCHOOLS.

Supervision is one of the vital needs of the rural schools, since most of their teachers are inexperienced. The number of normal-school graduates in rural schools is lamentably small. The reason is that the normal-school graduate can obtain a better salary by teaching in a larger field. The demand for this class of teachers makes their salaries so high that the country schools cannot afford to employ them. As soon as teachers become proficient by reason of experience acquired in rural schools, the probabilities are that they will be induced to seek better positions in cities where their experience and abilities will command higher salaries.

Add to this the other fact that many young men begin to teach as a stepping stone to some other profession, and while they are teaching a country school are studying law or medicine, and their hearts are with that rather than with teaching; and also add that many young girls teach until they marry, or as long as they are compelled to teach, and no longer, that they have no real love for their work and no wish to stay in it, and we see how the problems multiply.

Rural schools suffer from lack of trained teachers. In them, as a general thing, are young graduates from the village high school, or some favorite among neighborhood families, or a type of ancient teacher whose placid life is not disturbed by the vexing problems of his profession. This raw material must be developed, made shapely, orderly, and systematic, if time is to be saved to the children, and schools properly supported. *A bright and live supervisor* will bring order out of confusion, harmon

of discord, and will give life and beauty to that which before was inert ungainly.

Teaching is a great art, based on a profound science. The supervisor is expert who has given this art and science his careful attention, and ɔse business it is both to know how to teach, and to show others the of teaching. He can in some measure compensate for the lack of led work in the school by closely supervising and guiding inexperi- ed teachers and showing them what to do. An expert is one who sesses skill gained by practice. A supervisor who claims to be an ert should have experimental knowledge of "the how to teach." He is posed to have given careful attention to those things which character- a good school. Not only must he know how to teach, but he must ıw how to instruct others in the art and science of teaching. He must ı skilled teacher of teachers. Without this directing spirit, schools ɜt necessarily suffer until teachers happen upon some better way. It great misfortune for schools to wait for wisdom in teaching until the ıy mistakes of teachers have pointed out better methods. The pres- e of skilled supervision has been the salvation of many schools.

It is one province of supervision in the country school to bring teach- into contact with each other, to illustrate better ways of teaching, to ak up the isolation and monotony of rural school life, and to take to doors and homes of people and teachers alike the life and freshness ch have been the result of research and study on the part of the best ıds in the profession. The province of supervision in rural schools s far short of its legitimate purposes when it begins and ends in the oolroom.

This point is not sufficiently well appreciated by those who have the rsight and care of schools scattered over a large tract of territory. ıntry schools have an environment of their own which should neither forgotten nor ignored. The best supervisory work is that which brings ɔ the rural school everything in farm and rural life which is strong and e and wholesome. It is possible for the supervising officer so to exert influence as to give grace and dignity to each individual school, and ke it the rallying point for every good influence, a blessing to the entire ımunity in which it is situated.

Attention is here called to the fact that in general but little care aken in the selection of officers chosen to look after the interests of rural schools. In the majority of states the county superintendents elected by the people of the county without any regard to the paration or qualifications they may have for the work. Very few es require the superintendents to have any special qualifications, and many instances supervisors are put in charge of teachers who know *e about teaching* than they do, and are required to hold examina-

tions that they themselves could not pass. Add to this the fact that superintendents are generally paid very small salaries (average $828 the whole country) or a meager *per diem*, and that many engage in o business and regard supervision of schools as an incidental matter, it becomes apparent that professional supervision is too often the ex tion rather than the rule.

WORK OF SUPERVISORS.

We need everywhere trained superintendents of schools. "Supervi of schools should rank next in importance to the instruction in scho indeed, so necessary to successful instruction is competent supervi that the two should receive together the watchful oversight of the st (New Jersey State Report, 1894). Supervisors should know as muc teaching as the teachers under them, and should be able instincti to distinguish good teachers by their manners, dress, speech, disposit and character. The best work of a supervisor is his skill in selec teachers. Not by the results of examination alone, for some learned pe make poor instructors; not by yielding to the pressure of family or pc cal influence, for this will ruin any system of schools; not by selecting own friends or favorites, for this is unworthy of his office; but by fol ing the knowledge that comes to him through study, by long experie by careful observation, and by conscientious conviction, which ena him to know a teacher when he meets one, though he may not be abl tell why.

Teaching is a matter of both disposition and knowledge. The for cannot be examined, but it ought to be recognized; careful supervi will aid in developing it. Skill in doing this is an essential character of a good supervising officer, especially in connection with rural sch If the cry is raised (and it is) that there is not enough money to pay professional supervision, the reply is that it would be wiser to have fe teachers in order that those employed might be better qualified. A su visor who is an expert can so arrange and organize the system that a number of teachers can do the work and do it better, because each or thoroughly competent. "A good superintendent earns many times salary; a poor superintendent is too dear at any price. The worl supervision may be unsatisfactory either because the number of schoo too large for the oversight of one person, or because the supervising of lacks the talent for moulding, inspiring, and directing the work of oth (Pennsylvania State Report, 1895). Underpaid supervision is o unskilled and inefficient, and against this we raise our decided pro Such supervision is of no value whatever to the schools—a penny- policy that economizes in the wrong place. A supervisor should hav other *business than to care* for the schools. He should not be a

chant, nor a lawyer, nor a farmer, nor an active teacher. His busine should be to supervise the schools of his county, or township, or distric or whatever his area be called.

With a given sum of money for school purposes, to devote a part of i to skilled supervision will bring more children under enrollment, bette teachers in the community, better instruction in the schools, and more satisfaction to the people, than if all the money were spent in paying the salaries of teachers.

In twenty-eight states the supervisors are required by law to visit each school twice a year, in the other states they are allowed to visit the schools a often as practicable. In one or two states the supervisors visit the school very seldom. The length of time the supervisor spends in each schoo varies from fifteen minutes to one-half day. The time seems to depend ver largely upon circumstances, the number of pupils, the character of th teacher, the efficiency and the pay of the supervisor. A skilled supervisor inspecting an intelligent teacher can do more service in fifteen minute than an unskilled supervisor visiting a poor teacher can do in a whole day The average time spent in the ordinary rural school by the school super visor is about one hour every year.

In twelve states the supervisors devote all their time to the work. I these states the average salary is $1,002 a year. In fourteen states th supervisors devote only a part of their time to supervision, with an aver age annual salary of $408. Sixteen states report that in some countie the supervisors devote all their time to supervision, while in other countie the supervisors devote but a small part of their time to that work. I these states the salaries paid supervisors vary from $100 to $2,000 o $3,000 a year. Where good salaries are paid they devote all their time t supervision. Where small salaries are paid they devote but little time t this special work. All states have some supervision, though it varie greatly in amount and in efficiency.

In many sections of the country a supervisor not capable of suggest ing to teachers better methods of teaching and not able to detect fals methods pays only a perfunctory visit to the schools. He merely see whether the building is clean, whether the children look bright and inter esting, whether the enrollment is good, such facts as would be noticed by any person of ordinary common sense. Too often the contact of th average supervisor and the teacher of the rural schools is nothing mor than a mechanical business performance, with such elements of aid an encouragement as any intelligent visitor may give the school. Althoug this is not without advantage, it falls far below the standard of profes sional supervision.

How many teachers a supervisor can direct cannot be discussed excep *a general way.* Schools are more widely separated in some localitie

than in others, roads are better, teachers are better, and supervis
greatly in the rapidity with which they work. As a general rule, l
every rural school ought to be visited at least once in two
Supervision cannot be called close that does any less than tha
would be better if the schools could be visited once every month

No accurate information can be gained concerning the cond
the school, nor can the proper influence be exerted over teac
pupils, unless the supervisor has time at his disposal to make a re
thorough examination of the school and its surroundings. So
with an inexperienced teacher, he may find it necessary to spend tl
day in the school, while in other cases he may be able to visit
more schools in one day. The point is that he must not feel cc
to shorten his visit, or to leave his work half done, in order to m
engagements. To make his visits effective in the highest degree requ
and patience. The length of his visit must depend upon the ne
of the school, and of these he must be his own judge. An idea
of supervision would give one supervisor from fifty to seventy-fi
ers to supervise. Where the number of teachers is greater some
neglected, for a supervisor generally has many interruptions in h
such as rainy days, holidays, and the demand upon his time f
work, board meetings, committee meetings, public addresses, etc
it is impossible to put in every day in supervision. Allowance
made for other important duties.

Attention is also called to the power which the supervisor c
through rightly conducted teachers' meetings, institutes, asso
and round tables. Here he may meet the teachers under his d
and make use of the information which he has gathered in visiti
schools. From free and open discussions by the teachers he
an insight into their habits of thought and their methods of ex
Such meetings help break up the unsocial character of rural tea
bringing them into contact, so that each learns something from t
rience of all the others. In this way teachers and supervisors
better acquainted, gather fresh courage and new inspiration, and
feeling that they have much in common, and that, if they will, th
many ways be mutually helpful. The most deadening influen
the country school is its isolation. Nothing is more potent in c
ing this than frequent gatherings in which teachers, school
and parents freely discuss matters of common interest. To er
such meetings is one of the duties incumbent upon the su
Without being too prominent, he may still be the inspiring spi
ing, directing, and stimulating the tone and energies of all who
pate in the proceedings (*Appendix P*).

LEGAL REQUIREMENTS AND QUALIFICATIONS.

The necessity of establishing some qualifications to be required of those who are to occupy the position of supervising officer is emphatically insisted upon.

"If it is desirable to insist upon a certain degree of qualification for a school-teacher in the humblest district of the state (this proposition has passed beyond the realm of discussion), it would seem that there is no question that the superior officer clothed by statute with such extended powers as a school commissioner ought to be a person possessing some fixed qualification for the performance of the duties of his office. The schools of the state will never reach that degree of efficiency which the state has a right to demand, and which is expected from the generous provision made for their support by the people, until this evil is corrected. Some standard of qualification should be insisted upon, and the power of removal in case of the election of a person not possessing these qualifications should be vested in the state superintendent" (New York State Report, 1895).

In only seventeen states are there any qualifications, beyond that of being a resident and a voter. In some states a first-grade license is required, in others a normal or university course, and again in others he must be an experienced teacher. In a majority of the states, however, the electors are allowed to choose any person without regard to educational qualifications.

In answer to circulars of inquiry the following information was obtained regarding supervisors:

Wisconsin — By the law of 1895, must hold a university, normal, state, or special superintendent certificate.

New York — No standard of qualification.

Pennsylvania — Must hold a college diploma, or a state or local certificate; must have at least three years' experience in teaching.

Michigan — Must be a graduate of a reputable college, university, or state normal college, or must hold a state or first-grade certificate.

Mississippi — Must hold a first-grade certificate.

Texas — Must be a person of educational attainments and hold a first-grade teacher's certificate.

Tennessee — Can be appointed only from applicants who pass an examination on questions sent out by state board.

Georgia — Must pass a satisfactory examination.

Louisiana — Must have a common-school education.

Montana — Must hold a first-grade certificate and have one year's *experience* as teacher.

South Carolina — Must be able to conduct a teachers' institute.

Kentucky—Must be able to obtain a first-class teacher's certificat hold a state diploma, or state certificate.

Arkansas—Must have a first-grade certificate.

Maryland—The county school board may require applicants to b examined by the state superintendent.

Utah—Must have a valid certificate not lower than the grammar grad

West Virginia—Must be skilled in the art of teaching.

Iowa—First-class certificate, good for two years, a state certificate, o a life diploma.

It is unquestionably true that a supervisor should be as well and a highly educated as the better teachers he supervises. He should be man of broad and generous culture, a lover of good books, versed in th best literature of the day, one whose presence is an influence for good, an whose words are an inspiration. To require him to be in every case graduate of some higher school would be unreasonable, perhaps, but h should be a friend of higher education in every sense of the word. H must for a long time continue to be one from whom will come the influ ence which will lead the pupils in the rural district to strive for the high est education possible under the circumstances. His influence should b given to the establishment of rural or township high schools wherever th population will permit it. These schools should include in their course whatever is required on the one hand for entrance to the school of th next higher grade, or, on the other, those studies, a knowledge of whic can be made so to change life on the farm, in its various forms, that i will become more attractive and more profitable. In the establishmen and conduct of such schools the influence of the supervisor should be very prominent factor.

A supervisor should have a thorough knowledge of school work. H should know what a teacher ought to do in managing a class of pupils c any age on any subject. This is one of the things he is paid to know He should be an expert to whom teachers may go for advice and direc tion. If the advice is good and the direction wise, teachers will hav confidence in the administration of the schools, and rely more an more upon the supervisor. The system is thus reduced to uniformit and becomes a source of strength. The supervisor should be able to direc teachers in their professional reading, and select wisely a library c teachers' books, and place them where they are most needed. He shoul know about school periodicals and be able to form his teachers into read ing clubs and circles, and direct their studies. He should be able t arrange teachers' meetings so that time will not be wasted, and tha teachers will come with pleasure and stay with profit. He ought to b able to aid in selecting a library suited to the wants and tastes of an agri cultural community (*Appendix L*). In school extension he should be

leader, for he can thus make his influence felt in every part of his territory. In directing the home reading of the pupils and the people he may, if he will, find an immense field of usefulness. He can thus create and foster an interest in the welfare of the farm and the home as adjuncts to the rural schools.

He can understand and sympathize with teachers better if he has an experimental knowledge of their work. No supervisor is so good as he who climbed from the lowest rounds and knows all the steps. That this is indispensable we are not prepared to state. There are some very excellent supervisors who have but little experience in teaching, but who have seen enough and studied enough to know how it ought to be done. Experience would have been helpful, however, in understanding the limitations of their work.

First and foremost a supervisor should be able to instruct his teachers in the methods of organization and management of schools. This is particularly the case in rural schools where so few teachers have acquired skill in teaching. But instruction with a teacher is like instruction with a child. There must be an awakening, an arousing, a hungering after instruction. The conditions of "being filled" are that we must "hunger and thirst." The supervisor must inspire his teachers with a desire for better things. He should lead them to see that time is precious, and that the children in school this year may be on the farms next year and no more in school forever. They must know what to do and do it. The supervisor should be a source of inspiration. His corps of teachers must be alive, and eager, and studious. The thing most to be abhorred in school work is the teacher dead to advancement in professional studies. The supervisor must rouse teachers to work out for themselves plans and methods for building up their schools, and must set forth the principles which should control them in their work.

The county superintendent, or the supervisor of schools in any rural community, should have had recent experience in the schools which he is to supervise. In cases where this is not possible he should make a careful study of the peculiar surroundings of the schools of which he is to take charge. If the new departure which seems to be at hand in rural school education is to be a success, it must be carefully conducted in reference to those environments which are peculiar to each section. The supervisor who is to have a controlling influence in choice of text-books, in courses of study, in the selection and use of libraries, should be thoroughly conversant with the physical characteristics of his district, with the interests of the people, with their sources of wealth and living, and with the home life of the children (*Appendix O*). Whether it be a mining or a grazing region, whether agriculture or horticulture predominates as an interest, he should make himself at home in that domain of science or knowledge which will increase his usefulness as a school officer.

THE HOME AND THE SCHOOL.

The parents of children need instruction as well as the child themselves. The home influence and the school influence should harmonious, or confusion and uncertainty will arise in the child's m as to what he should do. The people must be reminded that the scl is an integral part of the community, and not a separate affair which law compels them to support, and which takes their children away w their assistance on the farm is most valuable (*Appendix O*).

In establishing the true relations between the home and the sch between the necessities of physical and those of intellectual educat the supervisor of rural schools finds an unlimited field of usefulness. rural districts parents are often ignorant of the advancement educa has made since the days when they went to school, and they are often ready to criticise anything new. The supervisor must gain their co dence, so that they will yield their ideas to his, and allow the teache their school to follow his directions without any hindrance from them

The supervisor can exert a wonderful influence in bringing the fire to the support of the teacher. To do this he must be able to edu the people concerning their relation to the school, as to sending the c dren regularly, as to providing necessary material, such as books, etc. to allowing every teacher to pursue those methods of teaching which skill and experience suggest as best suited to the wants of the sch At meetings of agricultural clubs, at town rallies, at educational "barbecu at commencements, at spring festivals, at farmers' institutes, he sh embrace every opportunity of saying a word for the schools, in orde arouse the people and interest them in the whole system of educat The columns of the country paper afford the supervisor a very re means of reaching the people. Almost every farmer takes the co paper that comes weekly to his fireside, which gives the news of the side world and the doings of his neighbors. School news is an im tant item and should never be omitted. Every week the paper sh contain something of educational interest from the pen of the superv though not always over his signature—suggestions for improvem statistics of enrollment and attendance, new and better ways of teach plans for schoolhouse construction and decoration. The press is v able to every teacher and helpful to the system of education by brin farmers into sympathy with the great educational movements of world. The press gives a larger audience, though it enforces a sh address. But a little every week, full of variety and interest, will e tually build up a healthy sentiment in the county and educate paren well as children.

The supervisor should have a direct or indirect control of the sele *of teachers. The crisis in* the history of schools is when teachers

be chosen. No one is so well qualified to choose them wisely as a faithful supervisor, and no one is more likely to do so conscientiously, since he knows the value of efficient teachers. This control can be given him directly or indirectly. If he does not wish to have the direct choice in individual instances, the same may be accomplished by giving him the power to examine and license teachers for his supervisory district. No one, then, can be selected by the board of directors except such as are approved by him. He prepares an eligible list to which the board is limited in making its choice. If the superintendent is conscientious and courageous in the preparation of this list, he can safely leave the responsibility of the individual appointments to the board.

In many cases the questions for such examination are prepared at the state office. In some instances the county board conducts the examinations, and in a few the answer papers are sent to the state office for final examination and approval or rejection.

The supervisor should be slow to condemn a teacher who is honestly striving to succeed, but if, after faithful and earnest effort, teachers clearly prove that school teaching is not their vocation, or, after repeated warnings, teachers will not try to do the right kind of work, it is clearly the duty of the supervisor to report the facts to the directors, and his report should be given great weight by them. The power to revoke the certificate is usually in the hands of the supervisory officer. It should be exercised with great caution and deliberation, but fearlessly whenever there is sufficient reason for it.

Since the supervisor is responsible for school methods and for results in teaching, the arrangement of the course of study and the selecting of the text-books should be largely, if not entirely, left to his direction. It is his particular business to know books as well as to know teachers. It is not to be expected that the men who constitute the ordinary "committee on text-books" and whose daily business has no relation whatever to school texts and their use, can decide what book is best for use in the schoolroom. It is very well to have a committee on text-books composed of the members of the board, to prevent possible abuse, but the advice of the supervisor should have much influence in determining the character of the books used in the schools.

SCHOOL DIRECTORS.

It is important that the relations between the supervisor and the school officers should be clearly defined. The directors[1] stand much nearer the people and have an immediate interest in the welfare of the schools. They contract with the teachers, care for the financial affairs of

[1] Director includes whatever term is used to designate the local school officers in *any state — as director*, commissioner, school committee, trustee, etc.

the district, purchase supplies, and are charged with the general busi
management. The success of the school depends very largely upon
kind of men who are elected to that office. In the rural districts especi
the duties of the director are mainly of a supervisory nature. He sh
inspect frequently the schoolhouse and school premises; he should
to it that everything is provided which is necessary for the comfort
convenience of both teacher and pupils, that the outbuildings are i
decent condition, and that the supplies are used with due regard t
wise economy. In the discipline of the school he should give a str
moral support to the teacher, and his influence should at all times be
the side of order and obedience. The board of directors should m
such rules and regulations for all the schools under its control a
deems necessary for the preservation of school property, for secu
punctuality and regularity, and for the general welfare of all concer
and it should support the teachers in their rigid enforcement.
should be in constant correspondence with the supervisor, so as to k
him informed respecting the progress of the school, and in case a teac
is derelict in his duties, or if for any reason the school needs a spe
visitation, it should inform him at once. On the other hand it sho
be the aim of the supervisor to establish the most cordial and intin
relations with the local directors. The supervisor should magnify
office of the director. Whenever he visits the school he should, if possi
induce the director to go with him. If at such visits they inspect
condition of the outbuildings and the premises, the supervisor can o
propose plans for the improvement of the buildings which the dire
will more readily appreciate and approve.

The inspection of a school by a competent supervisor is an ob
lesson of importance to the director. He is able to see at w
points the supervisor is aiming, and he learns something of his ideas
plans. He will thus be better able to counsel and advise the teache
the frequent visits which he makes to the school, and make more int
gent and specific reports to the supervisor. The practice on the part
the supervisor of calling the directors together at stated times for mu
conference is very commendable. These officers are often ignorant
their duties, but in a large majority of cases they are willing and anxi
to learn. There is no more effective way of improving the rural sch
than that of instructing and informing the men who have them in t
immediate charge. No doubt large sums are lost to the various fu
through carelessness on the part of treasurers and secretaries in the r
districts in keeping their accounts. The supervisor should make it
duty to audit these books at least once each year, with a view to accur
of statistics and economy in expenditures, and this should be one of
duties under the law.

THE VISITATION OF SCHOOLS.

The supervisor's method of visiting schools may be considered briefly First, he visits schools to see how and what the teachers teach, whether their manner is composed, their method clear and concise, their style interesting; whether they are teaching valuable facts, or wasting time on trifles; whether they are teaching what is right or what is wrong Second, he goes to find out what the pupils know. This is a test of the past work of teachers, which is shown by the general manner of recitation, the promptness with which pupils reply, the amount of information they have, the degree of skill they manifest, or the power of original thinking they have developed. Third, he inspects the physical conditions of the school building and grounds. He should note the conditions of the outbuildings, and if he finds them unsuitable in any respect, he should say so frankly to teachers and directors, and insist upon a change at once. The supervisor must know whether good light good seats, proper temperature and ventilation, and thorough drainage are secured. The supervisor should carefully observe the moral atmosphere which surrounds the school, whether it is on the side of order and obedience, of modesty, and of all those virtues which make the character of the typical American citizen. All these are demanded in order that good teaching may be made possible, and good health and public morals may be preserved.

Such being the purpose of the visit, the supervisor should put himself in easy and cordial relations with the teacher and the pupils, that he may have a true understanding of what each can do. The teacher may conduct one or more recitations in the various subjects of study, in order that the supervisor may see the usual methods of instruction. The supervisor can then suggest improvements if needed, and can even take the class in hand and demonstrate them. That he should ask for a class in any particular study and give the pupils a rigid oral or even written review, while the teacher may be attending to some other duty, is proper for by this means he can find out how much instruction has been given since his last visit and how thoroughly the course of study is being adhered to. It is, however, often best to allow the teacher to pursue the usual routine of exercises, in order that the supervisor may see the school at its everyday work.

An inspection of the teacher's register should not be forgotten. Such a register in every rural school should show the name and age of each pupil, the studies pursued, where each class commenced and its progress during the term, so that a new teacher can at a glance understand *at what point* the study of each branch to be taught is to be taken *up. The supervisor* should insist that such a register be carefully kept *by every teacher* under his control.

A private record of his own, in which names, dates, classes
conditions of rooms and premises, material needed, and general o
tions, are kept, will aid the supervisor. He can by this means tr
development of any one school and can more readily observe w
it progresses or retrogrades.

SCHOOLHOUSES AND FURNITURE.

Before closing, your subcommittee desires to emphasize the p
tion that the supervisor should have a controlling voice in th
tion of the rural schoolhouse, as respects all its sanitary con
Before the contract for a new building can be legally let, the
approval of the supervisor should be necessary, certifying that
certain heating, lighting, ventilation, and everything which condu
the health and physical growth of the pupils, the requirements o
enic rules and sanitary science have been carefully and fully co
with. The rural schoolhouse should be built in accordance w
laws of sanitation and modern civilization (*Appendix M*). It
will be until the state, speaking through the supervisor, compels
prerequisite for receiving a share of the public funds.

The supervisor should not be blind to the small things whic
ister to the comforts of the pupils. Often the rural school-teach
received no instruction upon these points. If the supervisor finds
facing a strong light, he should call attention to the evils likely to
and suggest a remedy. The same is true as regards unsuitable d
seats. The necessity of proper ventilation and proper temp
should be constantly dwelt upon. Without a thermometer, w
means of ventilation except the door and windows, the rural
teacher needs and appreciates all the suggestions an intelligent sup
may make.

Akin to this is the suggestion that the supervisor should insi
the schoolroom be kept clean and neat for sanitary reasons. Th
should be scoured as often as they are soiled; the wood, trash, an
should be carefully kept away from around the stove. The walls
be swept free of dust, the chalk racks kept clean, and the windo
polished. Pupils also should be required to keep their desks i
and their books clean. It is stimulating to the little ones and
to teachers for the supervisor to have them show their books, and
occasion to comment on the care or on the untidiness with which t
kept.

No better educational influence can surround the children than
arranged schoolroom whose floors and windows are clean, whos
are free from dust and decorated with pictures, whose school grou
well-ordered and shaded by trees and adorned with flowers, a

school presided over by a qualified teacher who is the personification of neatness and good cheer. Under such conditions the child is self-restrained and respects himself because his surroundings are respectable. The child naturally puts himself in harmony with his environment. If the teacher is neat and the schoolhouse is in proper order, the pupil will copy the example. Day by day beautiful, comfortable, and clean surroundings will have their ethical influence upon his development, until he comes in time to abhor anything that is not beautiful, well-ordered, and clean. This point is too often overlooked in plans for supervision. The reverse of this feature is also true. The rural schoolhouse, generally speaking, in its character and surroundings is depressing and degrading. There is nothing about it calculated to cultivate a taste for the beautiful in art or nature. If, under the influence of intelligent supervision, this can be changed, it will be a work over which coming generations will rejoice.

"There is scarcely a sounder principle in pedagogy than that care begets care; order, order; cleanliness, cleanliness; and beauty, beauty. Things conspicuously good command the respect of children, invite their imitation, and in ways real, though obscure, sink into their souls and mould their being. The power of good example in men and women no one disputes, but there is power akin to it in things, provided they embody the better thoughts of men and women — a power of which more should be made in school management than is made at present" (Massachusetts State Report, 1895).

If children are daily surrounded by those influences that elevate them, that make them clean and well-ordered, that make them love flowers, and pictures, and proper decorations, they at last reach that degree of culture where nothing else will please them. When they grow up and have homes of their own, they must have them clean, neat, bright with pictures, and fringed with shade trees and flowers, for they have been brought up to be happy in no other environment. The true test of our civilization and culture is the kind of home we are content to live in, and the influences of our schools should help to form a disposition for those things that make home life happy and healthy. If the farmer's boy can be taught to love books when he is at school, he will have a library in his home when he becomes a man; if the farmer's girl can be taught decoration at school, she will want pictures and flowers and embroidery when she becomes a woman.

We appeal also for the influence of classical art in our schools. If we have pictures, why not have reprints of those that have moved the hearts of men? Why not have the best looking down from our school walls? They are within the reach of any purse. One reprint from the great *masters is an uplifting* influence for all time. Cheap and gaudy adver-

tisements, glaring and painful chromos, depress the true spirit of art an perpetuate the crudeness we seek to overcome.

The same can be said of music. If we are to sing songs, why nc sing the songs of masters? They have sung many for children, beaut ful far beyond the rude compositions that fret our ears everywher Also with literature. Why not read the simple classics written for th little ones, and the greater classics for the older ones? Why not in a things get the noblest and best that the world has given, and use them t help our children onward and upward?

The silent influence of clean surroundings, of cheerful teachings, c classical pictures and music and literature, the presence of flowers an their care, the planting of shade trees and studies of their growth, will b a supervision so constant and so searching that no child can escape i Under its potent warmth, like the steady, quiet shining of the sun, th child plant grows into all the marvelous possibility of flower and fruit.

SUMMARY.

1. As to the character of the supervisor who is brought in contact wit the rural school-teacher in the discharge of his official duties:

(1) He should be selected with special regard to his peculiar fitne for that office. Whether his office is elective or appointive, his qualific tions, in order that he may be eligible, should be such as to enable hi to challenge the respect of those whose work he is required to supervis

(2) In regard to his scholarship, it should breathe that essential spir of learning necessary to making good, strong schools. The position c supervisor should be made professional with a view of meeting the deman for the best education which the rural school can possibly afford. Th requires a scholarship which is above that of the ordinary man. Th tendency to put persons in the supervisory position who have no ment attainments worthy of mention is earnestly deprecated.

(3) In regard to moral character, the supervisor should be a livin inspiring example of such a life as alone is worthy the Christian civiliz tion of our times. He should carry with him a spirit of sincerity in h work, so that people, teachers, and pupils may look to him with hear respect, and with entire confidence in the integrity of his purposes.

(4) In regard to his professional spirit, he should be in touch with th best educational thought of the times, carrying with him to the countr school-teacher, and to the people of a rural community, the freshness an life which come from reading and studying whatever bears upon the que tions he is called upon to aid in solving. He should be a leade endowed by nature with strong native sense, and at the same time able t impart enthusiasm and energy to all with whom he comes in contact.

2. As to the purposes of rural school supervision:

(1) It should serve to inspire and stimulate the rural school-teacher. If the supervisor is alive to his opportunities, every teacher within the sphere of his influence will be quickened and lifted up to higher efforts for the good of the school. The teachers should learn to look upon him as a friend, and not as a critic; as a wise counsellor, and not as a mere fault-finder.

(2) It should be the means of awakening and stimulating the pupils as well as the teacher. They should look for the visits of the supervisor with pleasure, and profit by his talks and advice. By instituting a system of central examinations for the rural schools, he may quicken and encourage the brighter pupils to obtain the best education within their means. The influence of a scholarly supervisor over the pupils is a very desirable thing in the rural school.

(3) The improved condition of the rural schoolhouse is a sure index of the work of a competent supervisor. The present lamentable condition of these buildings is due largely to ignorance and neglect. Competent supervision in skillful hands can work a marvelous change. The cultivation of a spirit of order and neatness which leads to the ornamentation of the school grounds and to a watchful care over all the environments of the schoolhouse, is one of the purposes of supervision.

(4) Supervision does not accomplish its legitimate purpose when it fails to cultivate a strong, healthy public opinion in favor of everything which tends to make a good school. Hence, the supervisor who contents himself with a perfunctory visit to the school only is not a supervisor in the broad sense of that word. A large share of the work of the supervisor is away from the school and among the people.

3. As to the results to be expected from intelligent supervision:

(1) In regard to the school, it unites teachers for a common purpose, and, by teachers' meetings and by the visitations of the supervisor, it breaks up the monotony and isolation of the country school. Under its influence better teachers find their way into the schools, better methods of instruction prevail, and the tone and spirit of the school are greatly improved.

(2) In regard to the community at large, supervision is just beginning to do its legitimate work. In the establishment of school libraries, in the relation of the supervisor to the directors, in an improved school architecture in which due regard is had to sanitary conditions, in the ornamentation and care of the school grounds, in school extension, in the introduction of studies which will add to the attractiveness and profit of life on the farm, in the consolidation of small districts into larger and stronger schools, in awakening a public interest in rural education, there is a field large enough to occupy the time and thought of the most *progressive* and most intelligent supervisor. It is here we are to look in the

near future for the best results of supervision as concerns the schools of the country.

LAWTON B. EVANS, *Chairma*
CHARLES R. SKINNER,
HENRY SABIN.

REPORT OF THE SUBCOMMITTEE ON SUPPLY OF TEACHERS.

The Subcommittee on Supply of Teachers has distributed a l number of circular letters of inquiry, designed to elicit informatio regard to the agencies now existing for the preparation of teacher rural schools, and for the improvement of teachers already in the ser and also in regard to certain conditions, as to the manner of certifica employing, and paying teachers, which affect the supply. In connec with this inquiry the attempt has been made to gather information the defects and excellencies of existing systems, together with sugges for improvement. To these a sufficient number of replies has received to justify the belief that they give a fair average statement o conditions which this report has to meet. Without attempting to s marize the returns, your committee would state the results of the inc upon the problem presented, and mark out the lines which must be lowed, and to what end, in order that the child in the country school receive the education which is his due. In some state systems pro along these lines is much more advanced than in others, and in s individual cases the desired end has been attained; but this is tru regards the entire country, in so small a degree that it is unneces even if it were possible, to particularize. With but few exceptions recommendations made could be justified by reference to various s or communities in our own country, and there are none which do rest upon successful experiences at home or abroad. It will be fo quite impossible to treat the rural school in any of its aspects wit touching in some degree upon ground common to all classes of sch and this is especially true as regards that branch of the problem assi to this subcommittee.

Certain conditions now very general must be changed in order the rural school may be supplied with better teachers.

TEACHERS.

There must be in rural communities a clearer appreciation o qualities essential to a good teacher. It is too often the case that no tinction is made between a teacher of superior scholarship, of pr

ability in instruction and discipline, of long experience, and one far inferior in all the qualities essential to success.

The teacher must be engaged for the school year. In many cases the engagement is from term to term, and these frequent changes are without exception classed among the most potent causes of failure in the rural school. It is widely true that the school is in session less than half the year; it is often true that in this short school year two teachers are employed, and seldom does a teacher remain a second year. Engagements should be for a longer term than one year, or continuous, and terminated only for cause, as is the case in many cities.

One of the most important points to be considered in a system of schools is that of the authorities employing teachers and assigning them to their work. In cases in which the county or township is the unit of school administration, the problem is solved; in case the district system prevails, the district containing one school, it is evident that the employment and assignment of teachers should be transferred to the authorities of the larger school unit, in order that in the assignment advantage may be taken of peculiar abilities and aptitudes.

The authority which examines should not employ.

Closely allied to this question is one of great interest in the southern states, namely, that of assignment of teachers to negro schools. For a full treatment of this subject see *Appendix J.*

SCHOOL YEAR.

The school year must be lengthened to a full school year of nine or ten months. In many states a minimum length is prescribed by statute, but in few cases is this sufficient. Whatever efforts may be made for the improvement of the rural school, until there can be offered a "year's work and a year's wage," it will be difficult and often impossible to retain accomplished teachers for continuous service; with this, many such teachers would choose this service, from family and social connections, and from a natural preference for rural life.

In countries in which people are accustomed to the action of centralized authority, prescription settles the matter, as in France, where the school year is more than forty weeks; in England, where, as conditions of receiving the government grant, the principal teacher at least must hold the government certificate of qualification, the school premises must be in good sanitary condition, the staff, furniture, and apparatus must be sufficient, and *the school must have met 400 times (200 days) in the year.*

In countries like our own, in which popular initiative in political matters has been the rule, success must usually come by other methods, and in this respect we have much to learn from our neighbors. In Canada the schools have been lengthened to a full school year mainly

under the stimulus given by the mode of distributing the governmen grants.

Letters and reports have been received from the different provinces By these it appears that the average length of the school year was i Ontario 212 days; in New Brunswick, 216 days; in Nova Scotia, 198. days, the full school year being 216 days, and some schools exceedin this limit. A report from Regina, in the province of Assiniboia, state that the full school year is considered to be twelve months less th holidays, amounting to seven weeks, but this limit cannot be attaine where the sparseness of the population obliges the pupils to travel lon distances, on account of the severity of the winters.[1]

Adding to our plan of requiring a minimum school year the Cana dian plan, already in a degree recognized in some recent school legisla tion, of making the amount of government grant depend in a large degre upon the length of the school year and the average attendance, consoli dating schools wherever practicable, and giving from the larger units o school administration to aid the smaller and weaker, the obstacle of th short term and insufficient compensation can be removed.

SUPERVISION.

Incompetent supervision forms one obstacle to a supply of bette teachers. This obstacle may be removed by securing professional super vision, as is provided by the plan of district supervision so successfull applied in Massachusetts, and just enacted in Maine. The subcommitte on supervision treats this subject fully.

It is necessary that more definite tests of professional fitness for th work of supervision be instituted. The extension of pedagogical instruc tion in colleges and universities in recent years is gradually elevating th work of supervision to a higher pedagogical plane, yet the point has no been reached of demanding professional preparation as an essential con dition. For examples of the requirements of more definite tests of fit ness see Ontario and France (*Appendix N*).

It is not unreasonable to hope that in the not distant future the popula standard of education may be so raised that on all educational boards o control, from the state board down to the county or township school board so much of pedagogical fitness, from the professional point of view, ma be demanded as to insure the intelligent consideration of such question pertaining to the profession as may come before them.

[1]The subcommittee is under obligation to more than it can name, throughout th United States, for information. For aid in its inquiries received from the provincial schoc authorities of Nova Scotia, New Brunswick, Quebec, Ontario, and Manitoba, and fror Mrs. Etta F. Grover, of Regina, Assiniboia, and Mr. Chisholm, Principal of the hig school in Regina, *it would here express* its thanks.

There are various recognized agencies for the improvement of teachers.

ASSOCIATIONS.

The state associations are mainly in the control of teachers representing systems of schools; in but few states are rural school-teachers much in evidence at these meetings. The fact that in some states the opposite condition holds shows that the state association may be made a powerful means of uplifting for the rural schools.

In many of the states vigorous county associations are found, although this is by no means universal. In these the rural school receives more recognition, but not often all which is its due. When the county association holds frequent sessions, and makes the interests of the rural schools prominent, it proves one of the most efficient agencies.

Some of the states report local associations of rural school-teachers which are very efficient. Generally the success of these is largely dependent upon the spirit of the local or county superintendent. With good professional supervision in township and county, the wants of rural schools and their teachers can find due consideration in local and county associations; and by proper organization of rural school sections in the state associations there may be secured such an affiliation of state, county, and local associations as will insure in time a full recognition of the peculiar needs of the rural schools.

It is desirable that the affiliation between these associations be such as to secure in part the working together, along the same lines of thought, during the same years, by the local, county, and state associations, under the inspiration of the State Department of Education.

SUMMER SCHOOLS OF SEVERAL WEEKS' DURATION.

In some cases summer schools are apparently conducted for the purpose of enabling those attending to pass examinations for certain certificates. The tendency is necessarily toward cramming for the examinations, and so far they cease to be educative in any proper sense of that term.

There is another class of summer schools, often held in connection with colleges and universities, conducted by able teachers, specialists in their departments, for the purpose of advancing education along true lines. Among these, the Agassiz School at Penekese many years ago, was a revelation and an inspiration to the teachers of the United States. These schools have multiplied in number and enlarged in scope throughout the land, and have proved of great advantage to thousands, not only by increasing their knowledge, but also and much more by bringing them under the personal influence of leaders of thought and masters in teaching.

A third class, with professional courses in psychology, pedagogy, and methods, often combining the character of the second class, preceding, offers great advantages for professional improvement. There should be in every county one of these for the especial benefit of teachers of the common schools; they should be free of tuition, organized and conducted under the supervision of the State Department of Education, continuing from four to ten weeks. There should be provision for practice teaching, and the instructors should be familiar with rural schools, their condition and needs.

INSTITUTES.

The normal institutes, so-called, organized in some states, especially in the West, are essentially the same as the third class of summer schools, described above.

County institutes of one week or more, held during the school year, may exert a great influence in the improvement of teachers. When they are conducted under efficient supervision, with a body of instructors capable of increasing the range of thought of teachers, and are organized under such laws as will secure the attendance of the teachers of the county, they prove a powerful means of educational advance.

For the description of such an organization of institutes and results see *Appendix P.*

Teachers' conventions or institutes of one day, as conferences between teachers, or with superintendents, will prove effective to a greater or less degree according to the purpose, plan, and mode of conducting. In order to secure the best results, they should be held at intervals so frequent that the effect may be continuous.

READING CIRCLES.

The success of the Chautauqua movement, of various organizations for home study, and of teachers' reading circles, in some cases, proves that these may be made generally efficient. There will be no lack of interest on the part of the teachers, if the organization and direction be wise.

The problem is apparently not a difficult one in the larger places, with systems of schools, where numbers of members are readily brought together, but the case is quite different in the case of rural schools. The results reported clearly indicate certain elements essential to success. To secure the advantage of organization there must be a central board of control. This may be a state board with auxiliary boards in counties and towns. Not only are books for reading to be selected, but a plan of work should be carefully drawn up and widely circulated among teachers. The central board should keep in touch with the members of the circles,

papers based upon the books read should be written and carefully examined, and the results attained should in some way be passed to the teacher's credit; thus, for a certain number of certificates indicating the completion of a course, a diploma may be granted.

The plan of organization is perhaps best formed by the teachers of the state acting through their associations, and the courses of reading can best be made out by committees chosen by the teachers for this purpose; the work may be directed by a committee, but, from comparison of results reported, the varying degrees of success, and the many failures, your committee believes it desirable that there should be in the state department of education a bureau of teachers' reading circles, with sufficient force to keep in touch with the local circles, to conduct and encourage correspondence with them, and in every way to promote their interest and efficiency.

Effective study demands the use of books for consultation and reference. Hence the reading circles should be conducted in conjunction with the lending libraries hereafter mentioned.

The reading circles must be considered as a means of improvement, especially for teachers already in the service. No other agency can really take the place of personal instruction in the original preparation of a teacher for his work. (See *Appendix Q.*)

LIBRARIES.

The country town has suffered, and still suffers, from the lack of books. In many states there is now a movement toward the extension of free library privileges, and wherever there is a town library every school should be made a branch. This system of library extension, becoming universal in cities, can be extended to country as well. By frequent exchange of books, under the immediate direction of the teacher as branch librarian, every teacher and pupil will have the use of a larger library in addition to the special library which should be found in every school. Some books should be added to the library for the special benefit of teachers.

The library belonging to the school is a necessity. Books lent for a time serve their purpose, but a love for good books and the ability to use them aright come most surely from daily companionship. From the library center, the school can be carried into the home. A more valuable work can hardly be done by the rural school-teacher than this, of developing a love for good reading.

In addition to these there should be established in the county, or the state, or both, a professional library for the use of teachers. This might well be a state library with county branches, and the management of it might well be under the bureau of reading circles which has been men-

oned. Such a state school library has been established in New York (*Appendix L*).

TEACHERS' TRAINING CLASSES.

The agencies thus far treated tend to the improvement of teachers already in the service, none of them furnish a first supply for rural schools, and there is a lack of special agencies designed for that end. The investigations of your subcommittee show that the existing normal schools in general do comparatively little in this direction, except by the teaching of their undergraduates. Although originally established for the benefit of the common school, they have naturally tended to keep step with the development of systems of schools in cities and large villages; the majority of rural teachers, often a vast majority, are now without any professional preparation whatever. The tendency is strikingly shown in returns from the Oswego, N. Y., Normal School: "Nine-tenths of our pupils come from the country; not one-tenth ever teach in rural schools." In one of the older states, after many years' existence of normal schools, of more than 12,000 teachers in the public schools of all classes less than 5,000 have ever attended normal schools, less than 4,000 have graduated from normal schools. Over 1,500 vacancies occur annually in the schools of the state; the normal schools of the state graduate about 300 annually, nearly all of whom become teachers in graded schools.

One of the leading states of the Union, with a well-organized school system and a grand equipment of normal schools aiming directly to train teachers for the rural schools, reports that a majority of its teachers have had professional training. Many other states report a much smaller proportion of trained teachers; one, 8 per cent.; another, with one of the best school systems, 30 per cent. As a contrast, an answer to the inquiry of your committee, from Manitoba, states: "Sixty-six per cent. of the teachers employed in the province in 1895 were trained. After this year *all will have training*." (See *Appendix N*.)

The cause for such a contrast appears later in this report.

The normal-school system was first devised especially for the benefit of the rural schools, and in obedience to a tendency which had become increasingly strong for some years previous to the time of their establishment. Some brief passages of educational history bearing upon this subject are here cited:

In 1823 Samuel Reed Hall opened a normal school in Concord, Vt., a school for the academic and professional education of common-school teachers, with a school for practice in teaching. Here Mr. Hall's lectures on school keeping were delivered to his class. These were afterwards published. The character of his work led to his being called to the principalship of the English department of Phillips Academy at Andover,

Mass. He was afterwards invited to take charge of Holmes' Acade Plymouth, N. H., and consented on condition that the school should called a teachers' seminary. He opened this teachers' seminary in 18 and continued it two years. In this school there was a classical depa ment and no practice school, but the course, as printed in *Appendix* shows the pedagogical character of the institution and the provisi made for its students to gain experience in teaching.

In 1829 a training school for teachers of the common schools w opened in the town of Effingham, N. H., by Hon. J. W. Bradbur ex-United States Senator from Maine, now living, at more than nine years of age, in Augusta, Me. By request, Hon. W. W. Stetson, Sta Superintendent of Maine, recently visited him to ascertain the facts i regard to this school, and the interview is annexed to this report *Appendix K.*

The sole purpose of Horace Mann in the establishment of the firs state normal school in Massachusetts, a purpose zealously carried out b the principal, Cyrus Peirce, was to elevate the common schools of th country. The course of study of the normal school was for one year. I the first year of the school a model school was organized, in which norma school students had daily practice in teaching. Mr. Peirce himself taught in the model school, as he felt that upon its success the success of the normal school very largely depended. Almost all the pupils at first came from country towns, almost all returned to teach in country schools. There was not then the difference between the rural school and the city school which now exists. In 1847 John D. Philbrick began the experiment of modern grading in Boston, and, with the full development of this system, later, the contrast between the school of the country and the school of the town became more and more marked, and the rural school problem appeared. The normal-school course, at first simple and adapted to the conditions it was designed to meet, developed to keep pace with the developing school system, and gradually drew away from the rural schools.

The normal school is often removed still further from those who would teach in rural schools by the tendency to raise the standard of admission to the requirements of a high-school course. The fact that most of the towns of the state have a high school is no proof that all those who will teach rural schools can go through a high-school course of three or four years, and then a normal-school course of two or three years. Great care should be taken that the normal school does not get too far from those whom it was especially set to serve. There is needed a more careful determination of the qualities and attainments requisite for entrance upon the work of preparation for teaching. These are sometimes given in larger measure by the experiences and responsibilities

of country life than by the graded city high school, and with these e
added step in education is great gain. So far as raising the standar
admission is in response to a claim that all academic studies shoul
taken out of the normal-school course, it may be said that the claim is
universally recognized as valid by those who have had most experienc
work at home, and can find but little warrant abroad. In the nor
schools of Prussia, Austria, Switzerland, and France, for example, a la
proportion of time is given to academic studies than in many of the
mal schools of the United States,[1] but with directions, certainly in Fra
that in all the course the professional aim shall be constantly kep
view.

It is evident that for the fitting preparation of teachers for the r
school some agency is needed intermediate between the brief conven
or institute and the normal school, with its two or four-years' course
far beyond the reach of the majority of rural school-teachers. What s
it be?

Several facts must be kept in mind in the solution of the probl
(1) A large proportion of the teachers of rural schools cannot afford
time and expense of a two-years' course in a normal school. (2)
receipts from employment in the rural school under present condit
do not remunerate one for the expense of a normal-school course.
is a simple matter of business, and sentiment will not change the fa
(3) Other conditions remaining the same, attendance at a school is in
inverse ratio to the distance between school and home. This is especi
true for a short course.

To meet these conditions there is needed a normal training sch
with a short course of study. The place — a village which will give
its schools to this normal training school for practice schools. Th
practice schools, organized as primary schools in one room and as gr
mar schools in another, will show what can be done with schools in
simplest form of gradation. For a part of the course all the gra
should be brought together to illustrate the work of the one-tea
school, such work as should be done in the ungraded school. A fac
of five or six good teachers, including practice-school teachers, wo
suffice for such a school.

This the general organization — what the work? Treatment of r
ter essential to good teaching would be grounded on simple fundame
principles. Deficiencies in education would be supplemented by so
teaching; principles of teaching and of school management would
taught and illustrated. Many might learn to do well what they had n
done at all; most would learn to do better what they had done poo

[1] See Report of Committee on Normal Education, Proceedings of National Counc
Education, 1892.

From these schools would come many students for fuller courses of training and a still wider usefulness.

This plan in its development would give a system of district training schools, analogous to the county model schools of Ontario, and the training schools of Quebec and Manitoba, with a course of study and training of one year, the first half of which should be mainly academic, for those who need this preparation, the second half mainly professional, the work so planned that those of more advanced scholarship need take only the course of the second half year. Of these schools there should be at least one in every county of the state (*Appendix N*).

The practice in teaching should be thoroughly organized. Every teacher in the school should be, in a certain sense, a training teacher; he should be responsible for the methods of teaching in his own subjects, and should direct lessons given by members of his classes to children from the model training schools. Besides such lessons, illustrative of methods of teaching, the pupil-teacher should be trained in conducting school work in the schoolrooms, under conditions similar to those which she will find in her own school. While teaching in the practice school under the direction of a teacher in charge, she should be left more and more to her own judgment; she should be held responsible for the control and direction of the school, and for the teaching of a class, not merely of a group.

The membership of the class for training should be limited to such numbers as will give the full advantage of the training course, or, with a practice school of the size presupposed, to about twenty-five. A large class necessitates the teaching of groups, not of full classes with the control of a school. The French law limits the number of students in each normal school to three classes of twenty-five each.

The practice schools should be under the exclusive instruction and control of their regular teachers a sufficient proportion of the time to keep them up to the standard of veritable model schools as well.

The completion of this course should give a teachers' certificate of elementary grade, which would also give admission to the state normal school with due credit on the normal-school course for work already accomplished.

There should be a summer term for rural school-teachers in every normal school in the United States. The plant of the normal school has cost thousands, in some cases hundreds of thousands of dollars, and for two or three months in the summer this investment remains entirely unproductive. The success of the summer term in The University of Chicago is significant, and the Winona plan, adopted this year in all the state normal schools of Minnesota, sets the example for the nation (*Appendix S*). In normal schools the work of the first year—*or the first*

part of the course—should be so planned as to have a unity in itself preparation for rural school-teachers, and the results accomplished the summer term should count on this course, so as to encourage sequent attendance at the normal school. The summer term should be an institute nor a summer school, in the usual sense, but should bine the elements of the other terms of the year; the attendanc children in the training school could be secured easily for two or hours a day.

There should be organized in all states a system of normal-sc extension analogous to the university extension. Wherever a clas sufficient size can be formed, a teacher should be provided. The should be so organized and conducted as to lead to definite re which can be credited to the members of the class.

There are two possible agencies in the preparation of teachers rural schools that have not been mentioned:

1. *City Training Schools.*—In large cities it is not to be expected the city training school will prepare teachers for rural schools; all graduates usually find employment at home. But cities in this cou with a population of more than 50,000 are comparatively very few, it is reasonable to suppose that training schools in cities of less 50,000 will prepare more teachers than can be provided with emp ment in those cities. The surplus will naturally seek positions in village and country schools.

Birmingham, Ala., a city of about 50,000, has had a training schoo eight years. During that time 25 per cent. of the graduates of school have found employment in the ungraded schools of the county state. If the training school is encouraged, it can be made an im tant factor in the preparation of teachers for rural schools. A part o course in these schools should, therefore, deal with the conditions of ungraded schools of the county, and the instruction should be specifi adapted to meet those conditions.

2. *Agricultural Colleges.*—Many pupils in agricultural schools colleges teach during their course. In some cases the agricultural co is brought nearer the people by the establishment of branches. Th Alabama there has been established in each congressional distri branch agricultural school, closely related to the agricultural mechanical college of the state. Cannot such schools accomplish n in the specific preparation of teachers for the work of the rural scho

3. *High Schools.*—An effective auxiliary in the training of elemer teachers may be found in high schools. In 1894–95 there were in York 247 such classes, with 2,482 students. The regulations pres the professional qualifications of the teachers who are to instruct t classes, and the equipment and the opportunities for observation

practice to be furnished. The course of study, extending through one year, covers the ground of common-school studies, including with subject-matter the treatment of methods of teaching, the history of education, school management, and school law. The school is to furnish each day the opportunity for the class, or some members of it, to observe methods of teaching in the several grades of common-school work, and, when practicable, the opportunity to teach in such grades under proper criticism and direction.

A system similar to this is in operation in the province of Quebec.

Although these training classes cannot take the place nor do the work of special training schools, yet they offer a ready means for effecting some immediate improvement in the teaching force of the state, and for the selection of those who have such fitness for teaching as will justify their pursuing a special professional course. The teachers of such classes must themselves have received thorough pedagogical instruction, else the result must be a failure; hence the necessity is apparent for pedagogical courses in all colleges.

According to the generalizations of the superintendent of the last census, over an area of our country of 1,688,827 square miles, containing a population of two to forty-five to the square mile, the occupation of the people is mainly agriculture; of this territory 1,096,790 square miles are occupied by a people mainly engaged in systematic agriculture, leaving about 260,000 square miles, with a population of forty-five and upwards to the square mile, in which the leading interests are commerce and manufactures, and in which professional and personal service are in large demand. The numbers engaged in the principal occupations in the United States, according to the latest United States census, were as follows:

Farm and garden,	8,375,979
All the professions,	944,323
Domestic and personal service,	4,360,506
Trade and transportation,	3,325,962
Manufacturing and mechanical industries,	5,091,669

In behalf of all these occupations, except the professions and agriculture, the claim has been made and has been allowed that special instruction in their interests be made an important part of the school curriculum —in commercial courses; in cooking; in manual training, on which such vast sums have been expended. Indeed, for many of the professions much of the school instruction is a direct preparation.

Much is said of the necessity for considering the environment of the child; for bringing into his school life the thoughts and interests of his home life, that the school may not prove to him a thing remote and *foreign; of making* the school a recognition of his past and a prepara-

tion for his future. Little sign of this can be found in the ordinary rura school.

The courses of study in normal schools of all grades should recog nize more fully than they do the environment and probable future life o the children in the schools, or rather, they should recognize the lines alon which lives of most probable future happiness would lie. As has bee shown, much the largest class of the workers of this country is engage in agriculture. The environments of their children are rural. The rura school should aim especially to make country life more attractive an beautiful, and should pay more attention to rural industries. Ever normal school should have as a means of instruction a school garden planned and conducted not merely to teach the pure science of botany but also the simple principles of the applied science of agriculture an gardening; and every rural school should also have its garden, throug which the training of the normal school may reach the home. Thi element of industrial training should be especially emphasized in th colored normal schools and rural schools of the South.

Other countries lead us. A *farm* has been set apart for this lin of instruction at the Provincial Normal School at Truro, Nova Scotia The school garden is common in the countries of Europe most advance in popular education. The school garden and the nursery of fruit tree are a feature of the normal schools of France; there is a course of agricul ture in the normal schools for men, of horticulture in the normal school for women.

The course in agriculture treats of preparation of the soil, specia culture of trees and shrubs, of fruit trees, grafting, and the vegetabl garden.

The course in horticulture in the normal schools for women treats o the garden in its general arrangements—the fruit garden, the vegetabl garden, the flower garden.

Each garden has a space reserved as a botanic garden for instructio in the science of botany.

The instruction received in the normal school is applied in the schoo garden of the rural school.[1]

[1] The school garden in the New Hampshire State Normal and Training School ha proved a source of interest and of instruction to pupils of all grades in the training schools and in the normal schools, such as nothing else can replace. In this garden al the grains and vegetables grown in the region were cultivated, together with a grea variety of flowers. Each class in school had assigned to it a plot, for which it was respon sible. In the George Putnam School, in Boston, a part of the school yard was turne into a garden, which has received several prizes from the Massachusetts Horticultura Society. On certain days the Jardin des Plantes in Paris is used as a place for botanica study by the school children. I found once on the roof of a London schoolhouse, whic was used as the girls' play ground, a large and beautiful collection of plants. And ye

A French report says that the French farmer is at first opposed to book farming; but when he sees that the products of the teacher's garden are superior to his own, he is glad to learn.

M. Boutan, an inspector general of public instruction, says in a report: "We can cite several departments in which, thanks to the initiative of the teachers, the wealth of the country has increased from year to year, and from which the exportation of fine fruit has become the source of considerable profit."

There can be no doubt that great improvements in agriculture might result from the general diffusion of such instruction through school gardens, under the direction of qualified teachers. Is there any other means for such improvement in sight of this generation? And a still higher good for the country life might come from thus blending its utilities and its beauties in the thought of the child.

Your subcommittee would also emphasize the importance of two other lines of work already developed in the graded schools, and of a third, which must be made prominent in all schools—language, elements of science or nature study, and morals. Whatever goes into the common school must go into the normal school. Hence, even in the brief course of normal-school training, the instruction in the English language, instruction in the essential elements of its beauty and strength, instruction leading toward such command of its best forms as will tend to make it a transparent medium for the expression of thought, must be held of fundamental importance. There must be such training in elementary science and in manipulation as will give the teacher essential knowledge and skill in this line of teaching, and there must be such instruction in elementary psychology and ethics as is necessary for the comprehension of general principles of method, and of the scope and methods of instruction in morals; and as the result of all the preparation which can be given there should be a clear comprehension of the essential aims of education. Would that all our teachers could have constantly in mind and at hand such a statement as is found on the desks of the common-school teachers of France (*Appendix R*).

EXAMINATION AND CERTIFICATION OF TEACHERS.

Were teaching a profession in the sense in which law and medicine are professions, teachers themselves would formulate the terms of professional recognition; but evidently the time for that is not yet. What the public school is immediately to aim for is uniformity in state examinations, and we have to consider the agencies, the standards, the methods for these

the rural school almost utterly ignores its only possible laboratory, the out-of-doors, the *garden laboratory*, right at hand. Here lies a duty, not a choice merely, for the normal school.—C. C. ROUNDS.]

examinations. The agency may be the state superintendent of pub instruction, a special examining board, or a state board of educati when such board exists. Times and places for examination shou be announced frequent enough and numerous enough to meet reasonable demand. The scope and character of the examinatio should be announced long enough beforehand to enable candida to consider the matter deliberately, as is now done in regard to examir tions for admission to college and for the civil service. Information to books for use and as to modes of preparation should be given. Ea examination should be conducted by an expert, and the papers should critically examined.

Certificates granted should be graded as to the range of the examir tion, not as to length of validity, unless the certificate be a provisior one. A one-year's physician would receive little credit; why should one-year's teacher receive more?

Examinations should cover the range of work required of the teach and should be written, oral, and practical. The written examinatio should be planned not merely to test the candidate's range of acquir ment, but rather his accuracy, his general style of thought and expr sion. The oral examination should test the range of attainment, the pe sonality of the candidate, and his readiness in resource. These two a generally combined in one—the written form, but there are great adva tages in the separation whenever it is practicable.

The examination for the elementary certificate should cover the grou of common-school studies, with so much of the elements of natural scien as is demanded for the intelligent teaching of the nature lessons in t common-school course. The questions should be few, but comprehensi and such as will fairly test the reflective power of the candidate.

The professional examination for the elementary grade of certific should not be severe, but should require clear general statements regar ing methods of conducting recitations and the organization and manag ment of a school.

The practical examination, or the test of skill, for the elementa grade of certificate, should include some test of the candidate's ability plan a lesson and an examination paper in some common-school subje and to conduct a recitation. If the candidate has been a member of class in training, a record of this practical work might be brought ov from the work in that class.

So much ability as is implied by this examination is necessary to t good teaching of any school. Wherever this ability cannot be secur now for the rural school, a clear public appreciation of the need will le to a supply of the means.

The examination for the advanced certificate should in general cov

the ground of an English high-school course of at least three years, or fair equivalents for such a course. A special certificate might be given for a foreign language. This examination should include psychology and ethics, drawing, and the elements of vocal music.

The professional examination for the advanced certificate should include history of education, methods of teaching, general principles of pedagogy, and the organization and management of schools.

The practical examination should include the preparation of plans of lessons and of examinations; judging the character of a lesson and a written paper; teaching, including an oral lesson on some subject in nature study, elements of science, language, or morals.

As in the examination for the elementary certificate, if the candidate is a member of any training class, the practical examination can be taken in that class.

Formulating the preceding statements, teachers' certificates should be graded in two general classes—elementary and advanced—and in each class three grades.

ELEMENTARY.

(1) Elementary scholastic certificate, Grade 3.
(2) Elementary professional certificate, Grade 2.
(3) Elementary certificate of skill, Grade 1.

ADVANCED.

(1) Advanced scholastic certificate, Grade 3.
(2) Advanced professional certificate, Grade 2.
(3) Advanced certificate of skill, Grade 1.

A life certificate of either class and honorable recognition in the profession should be granted after a certain period of successful teaching to those holding the first-grade certificate of that class.

In each class the higher certificate presupposes the lower; thus Grade 1 cannot be obtained without 3 and 2.

Many, if not most, of the examinations of teachers for rural schools in the United States today do not go beyond the range of the elementary certificate, Grade 3, as here given; the elementary certificate, Grade 2, could be obtained by attendance upon a teachers' training class in a high school. A course in a district training school organized as described in this report, or a partial course of one year in a state normal school, should give the complete elementary certificate. In many cases thoughtful and successful teachers in the rural school, by their own study and the help afforded by a well-conducted reading circle and a normal extension course, could rise from the elementary certificate, Grade 3, to the complete elementary certificate. A high-school course would give advanced certificate, Grade 3, and, with the course in a high-school teachers' train-

ing class, might give advanced certificate, Grade 2. The comple advanced certificate could be obtained by a two-years' course in a norm school.

This gradation of examinations and certificates will utilize to tl utmost the existing educational agencies, will point out to teachers a w in which they may rise step by step, and will thus encourage their advanc and will secure to the rural school the benefit of their improvement.

A question will arise as to the interval between the elementary ar the advanced certificate. (For a wider interval established in Manitol see *Appendix N.*) In many cases it may be best to lower the standa of the advanced certificate and make it intermediate between the el mentary certificate and the normal-school diploma attesting the cor pletion of a two-years' course. On this question your subcommittee pr nounces no opinion. It would point out a way by which the teache of the rural school as it now is may be taken as they are and induced enter upon a course of advanced study, and by which the school may deri all possible benefit from the advance; and your subcommittee believ that, by such a course, standards will gradually be raised all along the lin

Your Subcommittee on the Supply of Teachers for Rural Schoo in closing its report, would call attention to some of the main poin in this discussion.

It appears that there are numerous agencies which may be made ava able for the improvement of rural school-teachers already in the servic With these the only question is that of more perfect organization.

Although there is in general an increase in interest in education questions, and an elevation of standards of teaching, yet the large majo ity of rural school-teachers now enter upon their work with no profession preparation; the improvement in the character of rural schools, whe there has been any improvement, has been slow; large sections of tl country report no advance, some report a decline.

The causes for this condition, and the changes needed, are not far seek:

1. The school year must be lengthened to a full school year of nir or ten months, in order that skilled teachers may be retained. Th result can be secured, as it has been secured elsewhere when its absolu necessity has been recognized. The state, among other conditions f payment from the school fund, may prescribe a full school year, whi is done in England, as logically as six, or seven, or eight months, no done in some of our states, or it may secure this result, as it has bee secured in Canada, by making the length of the school so prominent condition in the distribution of the school fund as to insure the co-oper tion of the county and the town to this end.

2. The existing agencies for the supply of teachers for rural schoo

do not suffice. There must be modifications in these, and the provision of others.

3. There must be some definite standard for the certification of teachers, coming within reach of the teacher of the rural school, and encouraging advance to such higher degrees of attainment and skill as will give full professional recognition. And your committee believes that some provision should be made to secure inter-state recognition.

The question of finance does not lie within the province of this subcommittee, but it does not believe that the financial difficulty need prevent the necessary reform. When there is once full recognition by the state of its final responsibility for the education of every child within its borders, there will be possible such an adjustment of expenses between it and the lower educational units as will be burdensome to none and just to all.

Your subcommittee has sought to ascertain accurately what the rural school now is; in all its suggestions it has had in view the rural school as it ought to be. It believes that this nation can have such a system of schools for all its people as may challenge comparison with any other, and that it will have such a system when it clearly perceives the injustice and the peril of the present condition, and the way in which safety lies.

CHARLES C. ROUNDS, *Chairman,*
DAVID L. KIEHLE,
JOHN H. PHILLIPS,

REPORT OF THE SUBCOMMITTEE ON INSTRUCTION AND DISCIPLINE.

Your Subcommittee on Course of Study, Methods of Instruction, and Discipline in Rural Schools begs leave to report herewith that it has carefully considered the conditions which prevail in thinly settled districts with the intent to discover the evils that exist in the schools as a consequence of those conditions, such, for example, as (1) the want of classification and (2) the impossibility of thorough instruction on the part of the teacher, as well as (3) the lack of that stimulus which comes to the pupil from working at reasonable tasks in company with his equals. Your committee has hereinafter described and discussed various remedies, which it believes will have useful results in practice.

About one-half of all the teachers in the United States teach what are called ungraded schools. They receive in one room pupils of all ages and all degrees of advancement, from ABC's upward, sometimes even to algebra and Latin. In extreme cases each pupil is a class by himself in all branches, except perhaps reading, writing, and spelling. It quite often

happens that there is no uniformity of text-books, each pupil having a different edition or different author; the teacher is often obliged to borrow the pupil's book when he hears him recite.

According to Mr. Hinsdale's studies of the United States census (see *Appendix A*) the sparsely settled region of the country includes, first one-third of the whole domain entirely uninhabited or containing fewer than two inhabitants per square mile; secondly, an area of 1,688,82 miles with from two to forty-five inhabitants per square mile, leaving only 260,000 square miles containing more than forty-five to the square mile and the 443 cities with an aggregate of nearly 19,000,000 people.

It happens that ungraded rural schools with a very small attendance are to be found even in the most thickly peopled states and often in proximity to cities. Rhode Island in 1895 reports 158 out of its 26 schools as ungraded and sixty-four of them as containing fewer than ten pupils each; three towns have in the aggregate thirty-nine schools averaging fewer than ten pupils. Vermont in 1893 reported 153 schools with six pupils or less each. Massachusetts in 1893–94 reported sixteen towns with an aggregate of nearly 100 schools with an average of eleven pupils. New York in 1894–95 reported 2,983 schools with fewer than ten pupils each and 7,529 with less than twenty. Other examples are mentioned in the report of the Subcommittee on Maintenance.

A school with ten pupils of ages from five to fifteen years, of different degrees of advancement, some beginning to learn their letters, others advanced from one to eight or nine years in the course of study, cannot be graded or classified to advantage, but must for the most part be taught individually. The beginner who does not yet know a letter should not be placed in a class with another who began last year and can now read lessons in the middle of the primer. It will not do to place in the same class a boy beginning numeration and another one who has already mastered the multiplication table. The beginner in grammar has not yet learned the technique, and is confused and discouraged by the instruction given to another pupil in his class who has already learned the declensions and conjugations.

Any attempt, in short, to instruct two or more pupils in a class, when there is a difference of a year's work in their advancement, results in humiliating and discouraging the less advanced and in making the maturer pupils conceited. Higher learning in the possession of a fellowman seems to an illiterate person as something magical, or bordering on the miraculous: he can make combinations of thought which surprise those who are unused to them. The case is worse with the child in school. To him the elevation given by a year's study seems an endowment of nature and not a result of industry. Permanent injury to the pupils is very often occasioned by wrong classification. For not only does the

lower suffer from discouragement, but the higher pupil is necessarily injured by not being held to his best. The teacher is perforce obliged to adapt the lesson to the average of the class. This does not give enough work for the advanced pupil, although it gives too much for those below the average. There is not enough demand upon the first to continue the increase of his powers; he becomes indolent and stops growing.

For these reasons classification as above described ought not to be expected in the rural school; it must remain ungraded, and as a result the teacher must resort to individual instruction wherever there are intervals of a year or more in degrees of advancement between pupils, and this is the actual practice in perhaps the majority of such schools. The older pupils at least should have separate grammar, history, and arithmetic lessons.

It is understood by your subcommittee, as a matter of course, that even in a small school of six to ten pupils there may be two or more pupils of sufficiently near stages of progress to form one class—for example, two beginners in arithmetic, grammar, geography, or history. It may be that a dull pupil has already been studying arithmetic, grammar, or history for a quarter or a half year, and that a bright pupil just commencing the study would be able to keep up with him on a review from the beginning of the book; but it would not do to place a dull pupil commencing a study with a bright one who had already a half year's start in it. It often happens that pupils placed in the same class at the beginning of the year separate widely in power to learn new lessons before the middle of the year. In such cases a class should be broken up to prevent the twofold injury, namely, to the bright pupil by assigning him too short lessons, and to the dull pupil by assigning him more than he can well accomplish.

The teacher, even after forming classes in writing, reading, and spelling, has twelve to fifteen lessons to hear in a forenoon and nearly as many more for the afternoon. There is an average of less than ten minutes for each recitation. The ideal of the recitation or class exercise is that the teacher probe to the bottom the pupil's preparation of his lesson, and correct bad habits of study. If the pupil fails to master by sufficient industry the details—the facts and external items—the teacher counsels and reproves, requiring more work on the same lesson. If he finds that the details are mastered the teacher next tests the combinations, the thoughts that the pupil has used in connecting one fact with another and in seeing relations. Facts are connected so as to form a science when each one is made to throw light on every other fact, and all explain each. So a lesson is learned properly when the pupil can place each item in its systematic relation to the whole. He must understand the bearings of all; he must think out the interrelations.

Hence it happens that the good teacher is not satisfied with a m
riter recitation of the details of the lesson—still less with a wor
word rendition of the text-book. Not the mere words of the bool
even the disconnected facts or details which the words indicate, b
bring out the thought which unites these details and explains them,
main object of the good recitation. But such a recitation requires
The teacher cannot probe the pupil's knowledge in five minutes anc
rect his bad habits of study—nor in ten minutes. In the neces
brief recitation of the ungraded school there is barely time to tes
pupil's mastery of the external details of the lesson, the mere facts
technical words. It is for this reason more especially that the rural s
has been the parent of poor methods of instruction—of parrot m
izing and of learning words instead of things.

At the beginning of this century only one-thirtieth of the inhab
of the United States lived in towns of 8,000 people or upw
and more than 90 per cent. of all the public schools were ung
schools. The question has often been asked how it is that so many
men who became scholars and statesmen and professional men of
nence could have come from schools as poor as the rural school is s
be. Such eminent men as were produced in those times came fror
rural school; there were few graduates from graded schools to cor
with them. Of the men now living, past the middle age of life, n
all received their early education in the rural ungraded school, be
even as late as 1850 at least 80 per cent. of all the public schools
ungraded, there being only 12½ per cent. of the population reside
cities. The rural school threw on the pupil the burden of his educ
He was obliged to get his knowledge from books, such books as he
come to possess. Bright pupils do pretty well by themselves if
good books and taught how to read and to understand the tech
used in the elementary books of mathematics, grammar, and the
liberal arts. Any country boy who acquires a love for books, wh
access to the best ones, and studies them with energy, will by middl
become a learned man.

In the ideal classified school the teacher has two classes of p
each class containing within it pupils substantially at the same sta
advancement. The pupils of a given class recite together in al
branches, and the teacher has a half hour for a lesson and can go int
dynamics or causal relations of the facts and events treated.

Each pupil in a class learns as much from his fellow pupils as
the teacher direct; for the teacher draws out of the class its sto
observations and reflections on the topic of the lesson. He shows u
one-sidedness of the preparation of the individual pupil; some have
lected this point and some that other point. Each has probably negl

something. But, on the other hand, each of the diligent ones has brought forward something new that is valuable to his fellows. Each pupil finds through the recitation of the others that they have seen some things that had escaped his notice, although he supposed that he understood thoroughly the book presentation of the subject. His teacher suggests many new ideas and criticises the one-sidedness of the views of the pupils and also, it may be, of the text-book. All the statements of the book are brought to the test of verification — either through the child's experience or through other authorities. The child thus learns the method of study.

The ideal classified school can teach and does teach proper methods of study; the rural school cannot do this effectively in its five- or ten-minute recitations. It is because of this that wise directors of education have desired the consolidation of small schools into large schools wherever practicable. Two schools of ten each furnish on an average one-half as many recitations if united as they do when separate, owing to the possibility of pairing or classifying pupils of the same degree of advancement. Ten such schools united into one will give 100 pupils, with a possibility of classes of ten each, which can be more efficiently taught than before, because the pupil can learn more in a class than by himself. The class in the hands of a good teacher is a potent instrument for reaching all sides of the pupil's observation and reflection. Again, it is evident that five teachers can teach the 100 pupils united in one school far better than the ten teachers were able to teach them in the ten separate schools. If still further consolidation were possible and 400 pupils were united in one school, the classification might be improved to such a degree that a teacher could easily take the charge of two classes of twenty pupils, and ten teachers could do far better work for each pupil than was done by the forty teachers in the forty small rural schools before consolidation. Hence, economy becomes a great item in what are called "Union Schools."

Your subcommittee, in this discussion of the advantages of classifying and the corresponding disadvantages of the want of classifying, has assumed that as good teachers are supplied to the rural schools as to the schools of villages and cities — teachers of experience and skill, teachers of thorough academic and professional training in normal schools. It is assumed that states have made provision for good salaries in these ungraded schools, and that the license to teach requires professional training.

It is admitted as a fact, however, that the average rural school-teacher receives a small salary — not more than one-half that of the teacher in the city or large village. It is true, as reported by the Subcommittee on Maintenance of Schools, that some states, notably California, New Jersey,

Massachusetts, Rhode Island, and others to a greater or less degree, are providing, by a wise distribution of school money, to secure skillful teachers for these small, ungraded schools. But the evils above described as appertaining to instruction in ungraded schools are of such a character as not to yield to ordinary remedies.

Your subcommittee would call special attention at this point to the evil results that come from the attempt to remedy the defects of the rural school by forcing on it the system of classification found in cities. It is assumed that some of the benefits of the close grading possible in cities will be gained for the rural schools if they can roughly group the whole school into three or four classes. A rural school of thirty pupils comprising children from six to sixteen years of age, and covering different degrees of progress from beginners up to those of eight or nine years of schooling, are grouped, let us suppose, into four classes or grades—thus leaving intervals of two or more years of school work between a given group and the next one above it.

Your subcommittee has already pointed out the evils of classifying pupils in such a way as to bring together pupils differing in degree of advancement by intervals of two years. In fact, it has been found in city schools that one year's interval between classes is too much. The greatest danger of the graded school system in cities comes from holding back bright pupils for the sake of the slower and duller pupils. Next to this is the evil to the dull ones who are dragged forward at an unnatural rate of progress to keep up to the average rate of the class. The best pupils are engaged in "marking time," while the slowest are constantly spurred forward by teachers and parents to keep with their class, and their school years rendered miserable. Their self-respect is undermined by a false standard, that of mere speed in learning. The "marking time" injures the bright pupil by developing lax habits of study, while the forced marches of the slow pupil tend to destroy his poise of character. It has been found desirable, therefore, in city schools to make the intervals between classes as small as possible, so as to favor frequent transfers, namely, on the one hand, of bright pupils who are becoming capable of a greater amount of work into a higher class, and, if necessary, of those who are falling behind the average of the class into the next one below. Intervals of a half year are, therefore, adopted in a majority of the progressive city school systems, and many prefer intervals of a quarter of a year where it is practicable to make them, that is, where a large number of pupils makes possible the assignment of a requisite quota for each class. At the request of the subcommittee, Dr. E. E. White, an eminent authority on all that relates to school management, has furnished a statement of his views of classification in the rural school, illustrating them by a programme, which allows twenty-five minutes for each recitation. But

the intervals between the classes amount to two years' work, and inasmuch as he expressly provides for capable pupils, letting them "work ahead of their classes," he leaves the question where it is left by the subcommittee, unless the pupils are supposed to do their "advance work" without the teacher's supervision (*Appendix I*).

Your subcommittee would respectfully call attention to the danger of attempting to classify the rural school in imitation of the city school as peculiarly liable to happen in those schools where professionally educated teachers are employed.

The state and city normal schools have very properly laid stress on grading and classification, and on the methods of instruction by classes, and have ignored individual instruction. Their graduates have mostly sought and obtained places in the graded schools of cities and villages. In fact, the graded schools have outbid the rural schools for teachers having professional training. But, with the new movement to secure better teachers for rural schools by larger appropriations from the state, it has happened that many experiments of classification are attempted which result disastrously in the manner described, namely, by demoralizing, or destroying the courage and ambition of the exceptionally bright and the exceptionally dull pupils. The charge has been made that such rural schools as adopt a partial grading system are apt to become stiflers of talent by placing a premium on the average scholars, and holding back the promising youth of the district.

It is obvious from this that where state normal schools furnish teachers for the rural districts there should be conducted a special inquiry into the influence of the size of the school in determining the uses and the dangers of grading and classifying pupils.

There is no doubt, moreover, that the abuse of classification is the crying evil of the schools of villages and small cities. For the average pupil these village graded schools are uniformly good, but they often work injury to the exceptional pupils and are in this respect sometimes inferior to the ungraded schoolsin sparsely settled districts.

Your subcommittee would here explain that the technical terms "grading" and "classification" are often used, as above, to signify the same thing, namely, the dividing of the pupils of a school into groups or classes, each containing children of the same, or substantially the same, degree of advancement. But another meaning is often given to one of these terms. The work of the year, more or less, is also called the work of a grade, and the work of the elementary school, consisting of the first eight years' work, is divided into eight grades. It will be readily understood in this second use of the word "grade" as covering a year's work that a school may be graded, that is to say, its work may be arranged upon a programme of *eight grades, each one* of which requires a certain modicum of reading,

writing, arithmetic, geography, grammar, etc., for a year's work, and yet have only ten or twenty pupils, and perhaps these representing only three or four of the eight grades. By a graded school, as applied to such a state of things, is meant simply a school whose programme requires a regular sequence of studies and a full quota of studies for each pupil. If a pupil is at a certain degree of advancement in his arithmetic the programme of the graded system would place him also in a class correspondingly advanced in geography, history, reading, or other studies. But the small rural school has been called "ungraded" because it contains or may contain pupils of all grades, from the lowest to the highest, and consequently obliges the teacher to scatter his teaching force over a wide range of topics. The large school permits specializing by dividing the school in such a way that the pupils of one grade, or perhaps two grades, are taught by one teacher, the next one or two grades by another teacher, etc., permitting each teacher to specialize his work by giving him fewer topics to teach, and consequently insuring longer recitation periods and constant improvement in skill.

It is to be supposed that all schools will be graded in the sense that they will have a course of study, and that pupils will take up their branches of study in due order, and that these studies will be associated, so that a given degree of advancement in one study implies a given degree of advancement in another. What is properly called the correlation of studies presupposes that a certain degree of advancement in arithmetic corresponds to a certain degree of advancement in geography, reading, grammar, and other studies, all of these being determined within limits by the pupil's age. The word "grading," as a synonym for classification, is freely used by your subcommittee in this report, but it has discussed the topic indicated in the other and less frequent use of the word "grading" in that part of its report which follows, relating to the course of study.

THE COURSE OF STUDY.

Your subcommittee has assumed that the course of study in the rural schools should be substantially the same as that of the city schools. The differences should concern only minor details. It would, therefore, refer here to the report of the Committee of Fifteen for fuller details, and for the discussion of the grounds for selecting the several branches of the course of study. The course of study of the elementary school, whether urban or rural, should contain those branches which give the child an insight into the physical world and the means of conquering it for human uses, and also an insight into human nature and the motives that control the actions of men. The child should above all be taught how to combine with his fellows to secure reasonable ends. The windows of the soul are to be opened by the *five* branches of the course of study, thus enabling the

youth to see (1) the conditions of inorganic nature by arithmetic and the elements of physics and chemistry; (2) the conditions of organic nature by studying plants and animals, the land, water, and air, and, besides these, the means that man invents and uses to connect each place with the rest of the world — these things belonging to geography. These two "windows" look out upon nature. The three others enable us to see man; (3) literature and art as revealing human nature, arousing pure and high aspirations in the youth, and freeing him from narrow and mean views of life; (4) the study of the structure of language, as found in the several subdivisions of grammar and rhetoric; (5) history, which treats of the greater self — of man as a social whole.

These five branches belong to all schools, for they relate to the substance of humanity and are necessary for entrance upon civilization. Besides arithmetic, geography, literature, grammar, and history, there are collateral branches that each school should include — some of them information studies, such as oral courses in the sciences, in history, and in the arts — others of the nature of disciplines, or arts of skill, such as vocal music, gymnastics, manual training, the art of cooking, and some special attention to the elementary principles of the useful arts practiced in the neighborhood of the school, namely, farming, horticulture, grazing, mining, manufacturing, or the like (*Appendices G* and *H*).

In general these collateral branches should relate to the pupil's environment and help him understand the natural features of that environment, as well as the occupations of his fellow-men in the neighborhood. There are two things to understand in this matter of the geography of the environment. First, what it is and how it came to be — its land and water, its mountains and river valleys, its climate and soil, its productions, mineral, vegetable, and animal, and their peculiarities, how they differ from the productions of the rest of the world. Second, the means by which man procures from nature what is useful for himself and others, manufactures it and uses it, or exchanges it with his fellow-men so as to share in the productions of all climes and places, no matter how far distant. If a comparison must be made, this second topic of elementary geography is more important than the study of the natural features of the environment, because it is more immediately useful to the pupil and to the community in which he lives.

Let the pupil beginning the subject of geography commence with what is nearest to his personal and social interests, namely, with the products of the industries of his section. Let his studies go out from these products in two directions: first, to the natural conditions which make these products possible and which furnish in general the raw material; secondly, in the direction of the purpose of this, the uses made of it, the things produced, the needs and wants of his fellow-men near and far;

and the productions of the other parts of the world which are needed in his section to complete the supply of articles for food, clothing, shelter, protection, and culture. These items, including natural production and the human occupations of manufacture and exchange, may be said to be the chief theme of geography as it should be taught in the elementary schools. But the home environment is also to be kept in mind by the teacher throughout the entire course. Arithmetic should gain concreteness of application by its use in dealing with home problems. Literature should be pointed and applied, so far as may be without becoming provincial, to the pupil's environment; and so the other branches—history, and even grammar—should be brought home to the pupil's knowledge or experience in the same way. The pupil should have prepared for his study a list of the chief provincialisms of speech to which his section is addicted, and to the peculiarities of pronunciation in which his neighborhood departs from the national or international standard of usage.

The Committee of Fifteen has already advanced the opinion that the industrial and commercial idea is the central idea in the study of geography in the elementary schools. It leads directly to the natural elements of difference in climate, soil, productions, races of men, religion, political status, and occupation of the inhabitants, and it explains how these differences have arisen in some measure through cosmic and geological influences. It should be the teacher's object to make the pupil understand, just as early as his growing capacity admits, the peculiarities of his habitat, leading him to study the land and water formations in his neighborhood, and giving him power to recognize in the visible landscape about him the invisible forces that worked in the past, and still are at work in the present, moulding these shapes and forms. On the basis of this knowledge of the elements of difference produced by nature in soil, climate, and configuration of the landscape, he should explain the grounds and reasons for the counter process of civilization which struggles to overcome these differences by bridging the rivers and tunneling the mountains—by using steamboat and railroad so as to unite each particular habitat with the rest of the world. He should see how man adapts to his needs the climate of each place by creating for himself a comfortable temperature, using for this purpose clothing and shelter, as well as fuels of wood and coal or derived from oils and gases, to protect from cold, and on the other hand utilizing ice or power fans, and creating easy access to summer dwellings on the heights of mountains, or at the seashore, to mitigate the heat. He turns the soil into a laboratory, correcting its lacks and deficiencies by adding what is necessary to produce the crop which he desires. He naturalizes the useful plants and animals of all climes in his own habitat. It is evident that *the details of the process* by which differences of soil, climate, and

production arise, important as these are, should not be allowed to occupy so much of the pupil's time that he neglects to study the counter-process of industry and commerce by which man unites all parts of the earth to his habitat, and progressively overcomes the obstacles to civilization by making climate and soil to suit himself wherever he wishes.

To restate this important point in a word, it is true that the deeper inquiry into the process of continent formation, the physical struggle between the process of the upheaving or upbuilding of continents, and that of their obliteration by air and water; the explanation of the mountains, valleys and plains, islands, volcanic action, the winds, the rain distribution, is indispensable to a comprehension of the physical environment. But the study of the cities, their location, the purposes they serve as collecting, manufacturing, and distributing centers, leads most directly to the immediate purpose of geography in the elementary school, for it is the study of that civilization in which the pupil lives and moves and has his being.

Keeping this human standpoint in view all the time as a permanent interest, the inquiry into causes and conditions should proceed concentrically from the pupil's use of food and clothing to the sources of the raw materials, the methods of their production, and the climatic, geologic, and other reasons that explain their location and their growth. It is important in this as in all matters of school instruction to avoid one-sidedness. Although the human factor should receive the most emphasis, special care should be exercised lest the nature factor should be neglected.

Your subcommittee would refer to the discussion of this subject under the head of "Geography" in the report of the Committee of Fifteen for further illustration.

There is not much use in requiring instruction in branches not yet reduced to pedagogic form. It is necessary that matters taught should be so systematized for school use as to admit of arrangement in a progressive series of lessons, the first of which alone would be useful if no second lesson followed, and the subsequent lessons each useful if the pupil studied none of the following.

Each lesson when arranged in a pedagogic form leads up to the following lesson and makes it easy to grasp, just as each stair makes the next one easy to climb. For example, the first lesson in cookery is an exercise in accurate measurement by spoonfuls and cupfuls, etc., and calculated not only to aid in the next lesson and make it possible, but also to be of use through life in the kitchen. Concerted efforts are being made in agricultural colleges to reduce to pedagogic form the arts of the *farm, the garden,* and the forest.

THE PROGRAMME OF STUDIES.

Your subcommittee deems it important to call attention again in th
place to the prevalence of a misconception in regard to the relation of tl
course of study to the system of grading and classification. Every schoc
whether ungraded or graded, should have a course of study minute
arranged so as to show the average or reasonable rate of progress of tl
pupil of a given age and advancement in the work of the school; but,
has already been shown, it is not required that the school shall conta
classes in each and all of these grades, nor indeed classes at any giv
stage of progress in the course of study as laid down for any particul
quarter or term of the year. Above all it must be understood that in la
ing down the quarters or other divisions of a grade or year's work it
not to be expected or desired that the pupils entering school at the begi
ning of the school year in the fall should commence at the beginning
any grade's work. If a class consisting of two or more individuals (or
one individual only) left off the previous year in the third quarter's wo
of the fourth grade, it should begin its work after vacation at the poi
where it left off, unless there are special reasons which require a revie
of some portions of the work.

The course of study is the measuring rod or scale which is used
determine at what point in the eight years' work of the elementa
course a pupil has arrived. It should not be used as the Procru
tean bed on which to stretch the work of the school in order to give
uniformity. It has happened not infrequently in the past that upc
the first adoption of the graded system the superintendent of city schoc
held annual examinations on the completion of the work of the grad
and for this purpose insisted upon the unreasonable requirement that
of the pupils in the school should have begun the work of a grade on tl
first day of the year and should be expected to finish the grade work
the fourth quarter of the year. This was said to be for convenience
promotion—all pupils leaving the work of one grade and passing to tl
next were said to be promoted. This fiction has effected serious injuri
in city schools. The apparent reason for such a system was the co
venience of the superintendent who desired to make only one set of que
tions for each grade, and hold his examinations all at one time. If he h
adopted a plan of preparing an examination for any class of pupils at t
time when they should have completed the work of the grade (whether
the first, second, third, or fourth quarter), such a system need not ha
existed. The false idea of promotion has also been the source of gre
evils. When a pupil has finished the work laid down in the course of stu
for any grade, he should begin the work of the succeeding grade at onc
and it is not necessary to have any special examination. The class teach
is supposed to examine her pupils from day to day, for each recitatic

an examination revealing the pupil's understanding not only of the day's work but of his previous lessons; and the principal of the school is supposed to be well acquainted with the progress of his pupils. It is not necessary, therefore, to hold a general examination on the work of the grade if the class teacher and the supervising principal have performed their duty.

It is understood, too, that there should be much written work in the school, but that it should not as a rule take the form of competitive examinations. There is no other exercise in the school more valuable than that of written expression, but this should be limited chiefly to the review work of the pupil. The teacher, for illustration, should prepare questions at the close of the week, on the previous five or six days' work, such questions as bring out the most essential points and the principles which connect the details that have been studied. The pupil should be permitted to sit down by himself with plenty of time before him to write out his answers to these probing questions. By this means he learns gradually to collect his thoughts, and will do more thinking in connection with his written examination than in any other test or study in his school course. The written examination should not be postponed till the end of the year or to the end of the quarter, but should be a matter of at least weekly occurrence. It should be written work of a review character rather than examination of a competitive character.

While the course of study for the elementary school will cover eight years and be subdivided so as to show quarterly, semi-annual, or other stated progress, as already said, it will not be expected that the rural school with its ten or twenty pupils will have each and every grade represented; perhaps, for instance, there will be three pupils in the first grade, two in the second grade, one in the third grade, none in the fourth grade, two in the fifth grade, none in the sixth and seventh, and two in the eighth grade.

Your subcommittee assumes likewise that the discipline of the rural school should be strict though mild, like that of the city school. The fundamental school virtues of regularity, punctuality, and industry are auxiliary to moral virtues and form together a training of the will which is of great importance in producing the future good citizen. It must not be thought that, because a school is small, therefore the discipline is of less importance. The formation of habits of order, and of respect for the rights of the social whole, is necessary for the good citizen, whether of country or town.

REMEDIES FOR THE EVILS OF THE RURAL SCHOOL.

Your subcommittee would here point out that some of the evils of the rural school are due to its non-social character, its inability to furnish to

each of its pupils that educative influence that comes from association with numbers of the same age and the same degree of advancement. The rural school furnishes only a few companions to the youth, and those either above him or below him in grade of progress in studies. The remedy for the evils of the ungraded school are suggested by this very feature or characteristic. Radical remedies in this case must all contain some device to bring together pupils of different districts and bring into wholesome competition with one another the pupils of the same grade of advancement.

Transportation to Central Schools. — The collection of pupils into larger units than the district school furnishes may be accomplished under favorable circumstances by transporting at state or local expense all the pupils of the small rural districts to a central graded school and abolishing the small ungraded school. This is the radical and effective measure which is to do great good in many sections of each state. As shown already by the Subcommittee on the Maintenance of Schools, Massachusetts, in which the plan began under the town superintendent of Concord, Mr. John B. Tileston (about the year 1878 in Concord, or even earlier in the town of Quincy, see *Appendix F*), paid in 1894–95 the sum of $76,608 for the transportation of children from small rural schools to central graded schools — 213 towns out of a total of 353 towns and cities using this plan to a greater or less extent, and securing the two-fold result of economy in money and the substitution of graded for ungraded schools. The spread of this plan to Maine, Vermont, New Hampshire, Connecticut, Rhode Island, New Jersey, Ohio, and some other states (see Report of Bureau of Education for 1894–95, pp. 1469–82) demonstrates its practicability. Experiments with this plan have already suggested improvements, as in the Kingsville experiment in Ohio, where the transportation reached in all cases the homes of the pupils and yet reduced the cost of tuition from $22.75 to $12.25 a year for each of the fifty pupils brought to the central school from the outlying districts.

Improvement of Roads.—Wherever this plan of abolishing the small ungraded school is practicable it is by far the best remedy to be applied.

But there will remain large numbers of small ungraded rural schools in which the plan of transportation is not feasible by reason of great distances and poor roads. The Agricultural Department is seconding the efforts of many states to improve roads in rural districts. In many places road improvement is a necessary condition previous to the betterment of rural schools.

Special Appropriations for Small Rural Schools.—The device of securing skilled and professionally trained teachers by providing, as in California, a sufficient salary for each district, no matter how few its pupils (see *Appendix C*), has already been described by another subcommittee (that

on maintenance). It is undoubtedly a wise measure, provided it does not hinder the consolidation of districts through the adoption of the Massachusetts plan. If it works to preserve the small ungraded school in places where consolidation is feasible it will in the end be an injury to the cause of rural schools. Your subcommittee therefore ventures to call attention to the importance of adopting such laws as are operative in California, New Jersey, Massachusetts, and New York, for the better remuneration of rural school-teachers, but with a proviso that makes it a pecuniary advantage to a town to abolish its outlying ungraded schools and furnish transportation to a central school.

Concentration of the Higher Grades of Pupils.—Where transportation of the whole school is not feasible it sometimes happens that the teaching may be very much improved by the transfer of two or three of the pupils of the higher grades who consume very much of the teacher's time. By transportation of these two or three pupils to the central school the teacher thus relieved may find time for much better instruction of the pupils in the lower grades who remain under his charge.

School Exercises at the Town or County Centers.—For the small ungraded schools that cannot be abolished, perhaps one-third of all the schools in the United States at the present time, your subcommittee suggests the provision of occasional meetings at town centers or county centers, perhaps twice a year or oftener, under the direction of township, union township, or county superintendents, as the case may be. The meeting should have as its primary purpose the bringing together of advanced pupils—say sixth to ninth years' work for examination and comparison, the examinations to be chiefly written. Certificates should be given to those who complete the elementary course of eight years as a whole or in any one of its branches, permitting a pupil who passes in one branch this year, say in grammar or history, to pass in another branch at a subsequent examination whenever he presents himself. These examinations have been in operation in several counties of New Jersey for nearly twenty years.

This plan has an interesting and profitable illustration of many of its features in the operation of the Boxwell law in Ohio. (State School Commissioner Corson, Report 1895–96.) It was also carried out years ago in many particulars by Superintendent Wade in West Virginia.

The Proper Use of Competitive Examinations.—It is understood by your subcommittee that the prejudice against competitive examinations is well grounded. It often happens that schools are subjected to mere mechanical drill in order to secure a higher per cent. in this sort of examination. High per cents. cannot be obtained by entire classes upon work which requires not only a knowledge of details, but a knowledge of the causal relations underlying them. Your subcommittee desires to say

that it does not recommend indiscriminate competitive examinations, but that it recommends written work and examinations which test the thinking ability of the pupil and lead him to considerate inquiries and accurate statements. High per cents. on anything except mechanical work, such as spelling, the multiplication table, the tables of weights and measures, and paradigms, are not desirable.

The plan of township and county union exercises of rural schools above described obviously includes the good feature of social interconnection, each pupil of the remote districts working consciously in combination with many others towards a common end, and all the pupils stimulated both in school and out of it by this social motive.

Promotion of Home Reading.—The excellence of the Chautauquan plan for the promotion of home study lies in the same feature. Each reader is stimulated and encouraged by the consciousness that he is working on a task common to the endeavors of a vast multitude. The task is dignified and ennobled by such social participation. The youth in the rural district is by this plan to be made a home student, and his education is thus to be extended beyond the school. He may have obtained his first recognition in the township examination while he was a member of a rural school. He is an object of semi-annual inquiry on the part of the township or county superintendent for years afterwards. Each new teacher that comes to the rural school is charged by the superintendent with the duty of looking up the young men and young women who made a record in the central examinations, and inquiry is made after their continued reading and study. This in itself will be a powerful influence to cause young people to continue self-culture by studying a prescribed series of books in years subsequent to the school period. It will add dignity and self-respect to the rural school-teacher who is charged with the work of making friendly inquiry into this school extension, and of offering help in case of application from any of the parties interested.

Reviewing Studies.—The rural school with its five-minute or ten-minute recitations cannot do much in the way of reviewing previous lessons. The good teacher in a graded school carries on from day to day a review of previous lessons. He gathers up and connects with the lesson of the day all the essential threads that bind it to what has gone before. It is this work of reviewing that will be assisted by the occasional examinations at the township center.

Moreover, the old evil of the rural school, that of having all pupils begin at the beginning of the book at the commencement of each annual term, will be removed. For the superintendent will have a record of the standing of the advanced pupils and will require a report from the new teacher as to their programme of study.

This plan also points to the utility of more written work in the rural

school. A set of questions prepared beforehand and given to a pupil at the close of the week, as above recommended, will test not only his knowledge of the superficial details of his week's work, but also of his understanding of their deeper connections and principles, as no oral recitation could be made to do.

School Extension.— In this connection another branch of what is called "school extension" or "university extension" is practicable. Home reading can be managed from the same center, namely, the rural school. Everything that adds social importance to the rural teacher may be of service. It is evident that those pupils who have graduated from the public school and have entered upon the business of life may profitably carry on useful courses of reading in the various departments of literature and art, science, and history. The township or union township superintendent, in conjunction with the county superintendent or state superintendent, should set into operation as far as possible courses of home reading, employing the aid of the rural school-teachers to carry this into effect. A record containing the names of the persons who have undertaken home reading, the names of the books completed, and the dates of such completion, will form an interesting record. This home reading, moreover, should have its social gatherings in which there are discussions of the contents of particular books that are read. For this purpose the township superintendent or the county superintendent may select specially well-fitted persons who shall present analyses of the books and discussions of their contents. It is desirable that the course of home reading shall not be one-sided, but shall move in each of the three directions: literature, including poetry and prose; science, looking towards the organic and inorganic kingdoms of nature, the plant, the animal, and the details of matter and force; and towards archæology, ethnology, and sociology, and politics, history, biography, and art. One must not be altogether dissatisfied if it is found that the novel is the chief book in demand, especially in the first five years of the home reading circle. In our day the novel discusses every question of history, politics, sociology, and natural science. The old-fashioned novel which describes manners has its great use, too, in the fact that it gives to the people of whom we are speaking, the people of the rural districts, a ready knowledge of manners and customs of polite society. In this respect it is sometimes more useful than books of science and history.

Lancasterian or Monitorial Plan.— The topic of written work suggests a further topic of great importance in the rural schools, namely that of the occasional employment of older pupils in the work of supervising the exercises of less advanced pupils — a committee of two or three pupils to examine and mark the papers written by those studying geography; a *monitor* assigned for some hour in the day to inquire into the work of a

backward or dull pupil who has reached a difficult place in arithmetic; a similar assignment of a pupil to help another in a grammar lesson or a history lesson; these are cases where the monitorial or Lancasterian system may have greater or less utility. It cultivates directive power and self-respect in a pupil to be called to the aid of the teacher. But the dangers of it are well known. No weak disciplinarian should try the monitorial system. On the other hand, every strong disciplinarian in the ungraded school can use some features of it to advantage.

The bane of the Lancasterian system was its use to furnish cheap assistant teachers in graded schools. It resulted in bringing into the schools a class of so-called "pupil-teachers," educational novices in the place of experienced and professionally trained teachers who ought to be everywhere employed in graded schools. Limited entirely to ungraded schools and to teachers with disciplinary power, the older pupils may profitably be employed to help in the work of the school. But they should not take up any work continuously — it should all be occasional, inasmuch as every thread of the school work must come under the eye of the schoolmaster frequently — daily, or nearly as often. If he has asked an older pupil to explain a point in arithmetic to a dull pupil the latter will show the degree of efficiency of that help, in the first recitation after it.

Another rule for the guidance of the teacher is: never to employ a monitor unless such assignment of work is useful both to the pupils taught and to the pupil-teacher.

A teacher may gain time needed for assistance of the advanced pupils in some important study by requiring in advance the assistance of these pupils in some of the following forms:

(1) Marking examination papers.

(2) Helping pupils over some difficulty in arithmetic, grammar, or other branch having strict logical sequence in its topics.

(3) In explaining the thought of a reading lesson to a backward pupil.

The effort of one pupil to explain to another a difficult passage of literature is one of the most profitable of all school exercises. There will undoubtedly be crudities in the explanation, but this will all come out under the teacher's subsequent tests, and the exercises will increase in profit through the final explanation given by the teacher.

(4) In assisting to test mere memory work on the part of a pupil, as in the case of the spelling of difficult words, the learning of paradigms in grammar, the learning of the required tables of weights and measures, the multiplication table, etc., or in any other necessary data that have to be fixed in the memory. In general, what is nearest to mechanical work may be supervised at times by monitors, and monitors may be useful in assisting in the preparation of thought lessons that are to come later

before the schoolmaster, as, in the example given, the getting out of the thought of a reading lesson — or even of a history lesson.

In conclusion your subcommittee would lay chief stress on the function of school extension, above sketched in outline, as the most profitable line of work for the improvement of the rural school — both pupils and teachers.

WILLIAM T. HARRIS, *Chairman*,
ADDISON B. POLAND,
LLOYD E. WOLFE.

Mr. Poland, while concurring in most particulars, desires to add the following statement:

While I concur most heartily in nearly all of the recommendations made by the Subcommittee on Course of Study, etc., I feel compelled to state that, in my opinion, the report somewhat exaggerates the difficulties and dangers of attempting to classify pupils in rural schools. It fails to discriminate between rural schools of ten pupils each and schools of a larger number, say thirty to sixty pupils each.

The general argument is based upon conditions that exist in a "school with ten pupils of ages from five to fifteen years;" and the conclusion drawn is that "for these reasons, classification as above described ought not to be expected in the (any) rural schools."

The conclusion, it seems to me, is altogether too general. My own observation of rural schools in the states of Massachusetts, New York, and New Jersey has led me to believe that their efficiency as a rule is in direct ratio to their wise and careful gradation; that, in fact, the best-graded schools are the most efficient. I am speaking, of course, of rural schools containing twenty-five pupils and upwards, where partial grading, at least, is generally believed to be practicable. Grant all the cases of individual hardship that the report truly affirms of misgraded pupils, yet the total loss of efficiency is immeasurably less than where no grading is attempted. Economy of teacher's time, longer recitation period, class emulation, etc., more than offset the disadvantage, often only theoretic, of a pupil's working in advance of his point of "maximum efficiency."

I am not, therefore, in full harmony with the report, in so far as it may have the effect to discourage teachers from attempting to classify pupils, whenever and wherever practicable.

A. B. POLAND.

Mr. Wolfe, while agreeing in many points with Mr. Harris, desires to make the following statement:

Perhaps my opinion may be characterized as explanatory or supplementary *rather than* dissenting. Believing with Dr. Harris that the chief

aim of the report of the Committee of Twelve is to provoke thoug
make this contribution to that end. Complete unanimity no more e
among the members of this committee than among the great arm
teachers for whom the report is prepared; nor is such unanimity d
able. The subject will be treated under the following heads:

1, *The present condition and trend of rural school grading and classi*
tion in the states of the Union; 2, *Dr. Harris' plea for individual instru*
rather than the instruction (in the same class) of pupils who are more than
year apart in their advancement; 3, *The underlying pedagogic principles*
seem to justify Dr. Harris in opposing the doctrine of his report to a bod
opinion on classification and grading which is gathering volume and mon
tum with each decade; 4, *Objections to the doctrine of the report.*

1. Recent decades have witnessed a strong movement in many of
states of the Union to model the rural school course of study, grading,
classification after the ideal of the city graded school. Several states
pare, publish, and distribute state courses of study for rural schools,
send out, at stated times, uniform examination questions prepared with
erence to the course of study and the system of grading and classifica
set forth therein. In other states, the county school authorities issue
rural school course of study. In still other states, the school journals
associations hold up the grading and classification of rural schools as
ideal to be obtained in the near future.

2. The burden of Dr. Harris' report is: "Be ye not unequally yo
together." Just here a word of explanation of the expression "the i
of the city graded school." This ideal is a course of study divided int
least eight yearly divisions, or grades of work, the pupils of the sch
being divided into eight corresponding divisions, or grades. A schoo
graded when the pupils of a certain year, or grade, are pursuing the w
of a corresponding year, or grade, in all the branches. It is, therefore,
dent that the word "grade" has two meanings—a grade of work a
grade of pupils. All pupils who are graded are classified, unless there
but one pupil to the grade. But all pupils who are classified are
necessarily graded. A pupil without classmates is graded when he pur
all the work of the corresponding grade, and yet he cannot be said t
classified. Pupils may be grouped in classes, and thus be classified,
yet not be graded, because they may be pursuing work of different gra
Dr. Harris is not opposed to a course of study for rural schools, no
dividing that course of study into eight divisions, or grades of work,
yet to grouping pupils into classes, or grades, provided classmates are
more than a year apart in their advancement. But most rural sch
courses of study necessitate the grouping of the pupils of the fifth
sixth years of advancement into one grade; also, the grouping of the pu
of the seventh and eighth years into another grade. It thus happens

not only are pupils two years apart in their advancement yoked together in the same class and grade, but that, on alternate years, they are obliged to study the sixth year's work before the fifth, and the eighth before the seventh. It will thus readily be seen that the main thought of Dr. Harris' report is a standing protest against the grading and classification of pupils in the rural school as now practiced in many of the states.

3. We are now to inquire what pedagogic principles can be invoked to justify Dr. Harris in throwing the whole weight of his influence against the evolution of the ungraded country school into the graded school. And first, we must bear in mind that the subject of the report of Dr. Harris is "Instruction and Discipline in the Rural Schools." First, *efficient instruction must be adapted to the capacity of the learner, otherwise it cannot be grasped and assimilated.* Second, *other things being equal, instruction is more efficient when given to pupils associated in classes than when given to individual pupils.* Not only does a pupil gain much information from his classmates during a recitation, but the recitation gives him an insight into the individual capacities and peculiarities of those among whom he is to succeed or fail in professional or business life. Third, *efficient instruction requires a reasonable length of time for a class exercise.* In a city graded school, with at least one teacher for each grade of work, the three principles—adaptation of instruction to the capacity of the learner, grouping of pupils into classes, and a reasonable time for recitation—can be conserved. But, in a rural school with one teacher, to maintain one of these principles is to sacrifice another. The principle of the adaptation of instruction to capacity can be adhered to by dividing the pupils into eight grades of advancement; but such division gives a minimum time for recitation and a minimum association of pupils. If, however, pupils of the third and fourth, fifth and sixth, seventh and eighth years of advancement be grouped into three corresponding grades, we secure a longer time for recitation and a larger measure of association, but we violate the principle of adaptation of instruction to capacity, thus associating, in the same grade and class, pupils two years apart in their advancement. It thus appears that the problem of the most efficient instruction in a rural school with one teacher is one of maxima and minima. The principle of adaptation of instruction to capacity forever antagonizes the other two. A maximum adherence to it means a minimum adherence to the other two, and *vice versa*. Perfect adaptation of instruction to capacity would necessitate a grade for each pupil. Dr. Harris' report shows that he feels that, when pupils one year apart in advancement have been grouped in the same grade, this great principle of adaptation of instruction to capacity has been strained to its utmost limit, and that any sacrifice thereafter must come from other antagonistic and minor principles. His

report throughout shows that he considers adaptation of intruction t capacity the paramount and controlling principle; and the fact that h has made this the burden of his report shows with what trained acume he has brushed aside the trivial and subsidiary, and has laid grasp upo the vital and fundamental. A still more universal principle underlies th valuable report. It is this: that the success of an institution of any kin — political, religious, economic, educational — depends upon its adapt tion to its environment. A republic is, no doubt, abstractly the best for of government; but equally true is it that, under certain environmen an aristocracy or a monarchy is better than a republic. I take it, the that Dr. Harris has been a spectator of this evolution of the rural schoo with its peculiar environment, into the city graded school, with a ve different environment, till he has said to himself: "This is a forced an artificial evolution." Having arrived at the conviction that the rur school with one teacher cannot, without injury, be metamorphosed into graded school, Dr. Harris addresses himself to the problem of changin the present rural school conditions, (1) through transportation of pupi and (2) through pupil-teachers. Now this goes to the very heart of th question. For, through the transportation of pupils to central school the rural school conditions are transformed into city school condition and instruction can then proceed in harmony with the three principl above discussed. Or, if pupil-teachers are employed, or if the pupils the higher grades — fifth, sixth, seventh, and eighth, or seventh and eight only — be transported, the rural school condition will be in a measu removed, and instruction can proceed more in harmony with these pri ciples. It is true that transportation of pupils now seems practicable on in a small portion of the territory of the United States, and that pupi teaching meets with but little favor among rural school-teachers an pupils; but a careful study of the report of Dr. Harris will, no doubt, lea to a larger use of pupil-teachers and a much wider extension of pup transportation, especially in the upper grammar grades. During the la few decades there has been in operation in many of the western states strong evolutionary force, which has eliminated most of the high-scho branches from the majority of the country schools. In such cases, th pupils who have completed the eight years' work of the country school a expected to find high-school instruction elsewhere at their own expen of tuition and transportation. May not this same evolutionary force, in its own due time, similarly eliminate from the rural schools the wo of Grades 7 and 8? Whether such rejected pupils will be transporte or not will depend upon the sentiment of the community. In fav of the ultimate transportation of not only Grades 7 and 8, but higher grades, is that great socialistic force that has given birth to o

free-school system, our postalsy stem, and our asylums for physical, moral, and mental delinquents. Having addressed himself to the modification of rural school environment through pupil transportation and pupil-teachers, the Doctor finds himself face to face with a great body of rural school conditions which are unmodified and at present unmodifiable. It is here that he makes his plea for individual instruction rather than the instruction, in the same class, of pupils who are more than a year apart in their advancement.

4. The branches of the eight years' course of the rural school are: writing, drawing, music; physiology, grammar, civil government; spelling, language, geography, history; reading; arithmetic. We shall be able to get a better understanding of the subject if we suppose a city school of eight grades, four rooms, and four teachers to be suddenly reduced to one-fourth its former number of pupils, rooms, and teachers. There will then remain one teacher, one room, eight grades of pupils and eight grades of work, and, say, forty pupils; that is substantially rural school conditions. This one teacher now finds that, while he has no more pupils to instruct than he had before, these pupils are scattered among the eight grades. If he adheres strictly to the former graded structure of the school, keeping each grade of pupils distinct in all the branches (allowing six recitations a day to each grade), he will have eight times six, or forty-eight, classes. This gives him an average of about five minutes for a recitation period. The inadequacy of this time for the development of a subject needs no comment. He must group these scattered pupils into classes, largely ignoring grades, and many of these classes will contain pupils from different grades. By almost unanimous consent it is agreed that the pupils of the eight grades can be grouped, for general exercises, in writing, drawing, and music, requiring but one recitation period for each branch. One recitation period will answer for each branch in grammar, physiology, and civil government; two recitation periods each in spelling, language, geography, and history; four in reading; five in elementary numbers and arithmetic. This gives twenty-three recitations, ranging from ten minutes in the lowest grades to twenty in the highest. It will be observed that I state above that many of these classes will contain pupils from different grades. Here appears the significance of my definitions of *class* and *grade* in the beginning of this discussion — definitions on which the teachers of this country are far from being a unit. The fundamental principle underlying ***grading*** is symmetrical development; the fundamental principle underlying ***classifying*** is harmonious development. Symmetrical development aims to advance the pupil with equal pace in all the branches; harmonious development aims to advance him in harmony with his individual capabilities. *Many of the pupils* of our best graded schools are classified in violation

of the principle of harmonious development. This statement takes no note of mistakes in grading, by which pupils are assigned to the wrong grades. The grading of schools in accordance with the principle of symmetrical development necessitates a violation of the principle of harmonious development. I have reference to those pupils who are assigned to the right grade in a majority of the branches they pursue, but who, in one or more branches, belong to grades above or below the one to which they are assigned. It, therefore, follows that the reorganization consequent upon transforming the four-teacher school into the one-teacher school would bring some pupils into classes better suited to their abilities than the classes to which the graded system had assigned them, thus bringing about a classification more in harmony with the principle of adaptation of instruction to the capacity of the learner. Classification and its correlative principle of harmonious development are the corner stone of the rural school; grading and its correlative principle of symmetrical development are equally fundamental to the city school. In a graded school the pupil is assigned to classes belonging to one grade only; in the country school he is assigned to classes adapted to his capacity, regardless of the number of grades represented by these classes. I institute no comparison here as to the relative merits of the principles—harmonious development and symmetrical development—but simply state the fact of their relations respectively to the city and rural schools.

If practical adaptation of instruction to the capacity of the pupil were really attainable in the graded school, I should hesitate to recommend a classification that would group, in one class, pupils more than a year apart in their advancement. But such adaptation is largely ideal and theoretical. However well the school be graded, the strongest pupils and the weakest are separated by a long distance in the character, or grade, of their work. Whether in the primary, the grammar, the high school, the college, or the university, a certain per cent. of the students do most of the highest order of work. These strongest pupils discover and develop the deepest relations. The weaker pupils soon learn to repeat the stereotyped expressions of these relations, and to store them away in their memories to be fished forth at stated intervals by the written test. The apostle Paul, that he might not offend his brother, would eat no more flesh while the world stood; but a large per cent. of the students of all grades, not from fear of offending their brother, but from their very mental constitutions, abstain, with equal fidelity, from the strongest mental diet. I can select, at random, one-half the pupils from Grades 6 and 7 of a city school, and put them to studying, indifferently, North America, South America, Europe, or Asia, and the former leaders in Grades 6 and 7 respectively will still lead. What is true of geography is true of history,

civil government, physiology, spelling and reading, and, in a measure, of grammar and arithmetic. Certain pupils are mentally built for accuracy, clearness, depth, and power; others, for relative inaccuracy, obscurity, shallowness, and weakness. A rule requiring, as a condition of promotion, that all pupils, of any certain grade, should do as high an order of work as is being done by some of the pupils of that grade, would virtually stop the wheels of promotion. Many of the pupils would never reach a higher grade; many others would do so only after repeated attempts and failures.

The gist of Dr. Harris' objection to grouping pupils who are more than a year apart in their advancement is that the more advanced pupils will be kept marking time, while the less advanced will be dragged along at an unnatural rate. My answer is that the stronger pupils will do the higher order of thinking, just as they always do, while the weaker pupils will do the lower order of thinking, as they always do, getting some knowledge from the books, some from the teacher, and some from their stronger classmates. The rural school has the advantage over the city school in that its pupils learn much from the recitation of classes to which they do not belong. In a graded school, the walls of the schoolroom shut pupils out from what is being recited in other grades. In a rural school, the pupil can listen to the recitation of any grade. You tell me that this is absorption, that the pupil gets this outside knowledge at the expense of the preparation of his own lessons, and that the practice of listening to other recitations militates against the principle that a great aim in education is to learn to master the printed page; but it is nevertheless the testimony of many of our greatest educators that the knowledge thus obtained by them in the country school was invaluable. The mind has strange and subtle methods of threading its way to knowledge, not always in harmony with the pedagogue's theory. What teacher in arithmetic (who has had the courage, temporarily at least, to lay aside his cut-and-dried solution-formulæ) has not been surprised and delighted at the ingenious methods different pupils have of solving problems? What master of the topical method in history, civil government, or literature has not marveled at the rich relations revealed by pupils when left free to take their own initiative? A nation does not postpone its entrance upon a career of republican government till all its members are ready for self-government. The members of a church are not of equal intellectual or spiritual caliber, nor are the members of a family; yet they are associated in one class — the state, the church, the family. In actual life, persons of all degrees of advancement behold alike the same procession of the heavens, the same succession of seasons, the same world-happenings; but *all do not get the* same kind and amount of information from the mar-

shaling of the constellations, the budding and fruiting of spring a summer, and the drama of events daily unfolding. I grant that t examples above given are not identical with the thing to be exemplifie but they present important elements of similarity. Finally, I am fully co vinced that the rural school conditions necessitate a departure from t doctrine so ably laid down by Dr. Harris, and I believe principles can found to justify such departure. Whether or not I have found the principles and set them forth in this supplementary report is anoth question.

L. E. WOLFE.

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APPENDIX A.

SOME SOCIOLOGICAL FACTORS IN RURAL EDUCATION.

[From a paper read before the Department of Superintendence of the N. E. A., at Jacksonville, Fla., February, 1896, by B. A. Hinsdale, Professor of the Science and the Art of Teaching in the University of Michigan. (See "Journal of Proceedings and Addresses of the Thirty-fifth Annual Meeting, held at Buffalo, July, 1896," pp. 261–9.) A discussion on the same lines, but much fuller, will be found in Dr. Hinsdale's work, entitled "Studies in Education," pp. 313–38.]

First we will give our attention to density of population. The importance of this element in the rural school problem becomes obvious at a glance. In populous districts fewer schools and districts relatively are called for, while, at the same time, owing to the larger numbers and the more varied attainments of the pupils, the system can be more fully developed. The school and the home, under the present system, cannot be far apart; otherwise children will attend the school with difficulty, or not at all. Once more, the interest and enthusiasm of pupils and teachers depend directly upon the number and the ability of the pupils present. For the majority of children individual instruction, or anything closely approaching it, is not to be commended. Aristotle condemned such instruction on political grounds. It may also be condemned on pedagogical grounds Children need the inspiration of numbers. Besides, numbers contain ethical value. As a rule, you can no more make a good school out of a half dozen pupils than you can make a powerful galvanic battery with one or two pairs of plates. Then, again, the question of cost is directly involved. Where pupils are scattered and the schools are small education is necessarily very expensive, provided it is at the same time good. Generally, however, it is bad.

To illustrate: Some twenty years ago I investigated one of the old townships in northern Ohio with respect to its school condition, and with these results: Schools, 7 in number; youth of school age enumerated, 191; pupils enrolled in schools, 103; average daily attendance, 71; average size of schools, 10 pupils; largest enumeration in any district, 85; smallest, 12; largest enrollment, 37; smallest, 3; largest daily attendance, 25; smallest, 3; largest cost per pupil in any district, $42.60; smallest, $18.56. The average cost per pupil the same year in the state was $13.36. Argument is not needed to show that this was an inefficient and wasteful township system of education. How much better it would have been if the seven schools could have been consolidated, thus putting all the pupils under two or three teachers. I remember a school in Ohio, within sight of my own home, that was kept in session a whole summer with but two pupils in attendance, and those two were all there were in the district. My father, who was a man of close observation, was in the habit of remarking in my boyhood that a farm of 1,000 acres situated all in one school district would, as a rule, spoil the school, by reducing the number of children, and I have often seen confirmation of his statement.

The Census Office at Washington considers those parts of the country that have a population of less than two to the square mile unsettled. These parts amount to a little more than one-third of the whole, not including Alaska. Once more, in constructing its tables and maps to show density of population, the Census Office excludes the cities, or those centers of population containing 8,000 persons or more. In 1890 the second of the two rules *excluded 443 centers* of population, containing an aggregate of 18,835,670 *inhabitants, or 29.12 per cent.* of the whole.

The whole country, less the parts excluded by the first rule, the Census Office has divided with reference to certain *maxima* and *minima* of population, as follows:

2 to 6 to a square mile,	592,037	square miles.
6 to 18 " "	394,943	"
18 to 45 " "	701,847	"
45 to 90 " "	235,148	"
90 and above "	24,312	"
Total,	1,947,287	"

The Superintendent of the Census makes some interesting remarks upon the economical significations of these statistics, as follows:

"These limits define in a general way the extent and prevalence of various classes of industries. The first group, two to six to a square mile, indicates a population mainly occupied with the grazing industry, or a widely scattered farming population. The second group, six to eighteen, indicates a farming population with systematic cultivation of the soil, but this either in an early stage of settlement or upon more or less rugged soil. The third group, eighteen to forty-five to a square mile, almost invariably indicates a highly successful agriculture, while in some localities the beginnings of manufactures have raised into this group a difficult farming region. Speaking generally, agriculture in this country is not carried on with such care and refinement as yet to afford employment and support to a population in excess of forty-five to a square mile. Consequently the last two groups, forty-five to ninety and ninety and above to a square mile, appear only as commerce and manufactures arise, and personal and professional services are in demand."

He might have introduced education with equal propriety. The statistics given throw a direct light upon school material, and an indirect one upon school resources. Much the same may be said of churches and the intellectual and moral instruments of society generally. There is, therefore, cause for deep regret that such large areas of country are falling off in population. From 1880 to 1890 more than 400 counties, or about five times as many as there are in the state of Ohio, suffered in this way.

But, secondly, the character of the population must be considered as well as its number. It is evident that a certain homogeneity is very conducive to public education. The children of such a community can be educated together, and hence more cheaply and more effectively. One system of schools suffices for all classes. But if the children must be segregated in different schools according to non-educational tests, one of two things will certainly happen: either public education will become expensive, or it will become inferior in quality. Looking at the subject from this point of view merely, it is unfortunate that in large portions of the United States popular education should be embarrassed by the race question. In 1890 the per cents. of white and colored population, respectively, were distributed in the five great divisions that the Census Office recognizes in the following manner:

North Atlantic States,	98.4	1.6
South " "	63.2	36.8
North Central States,	98.0	2.0
South " "	68.3	31.7
Western States,	94.8	5.2

If per cents. for the states severally were given the contrasts would be still more striking. The per cent. of colored people in New Hampshire, for example, was .18, while in South Carolina it was 59.87. Now there is little probability that the educational value of such statistics as these will be exaggerated. The presence of a large colored population in any state or other community tends to affect popular education unfavorably in three ways: to increase its cost, to make its quality inferior, and to lower both the intellectual and moral level of society and its money-earning capacity.

In one respect the rural parts of the country are better off, upon the whole, tha cities. Religious differences do not disturb popular education to the same e Relatively, parochial schools are much fewer in number.

In the third place, the wealth of society is a very important factor in educatio particularly in rural education. Naturally the per-capita wealth of the several div of the country varies greatly. In 1890 these were the averages:

North Atlantic States,	$1,132 per capita.
South Atlantic States,	579 "
North Central States,	1,129 "
South Central States,	583 "
Western States,	2,250 "

In the North Atlantic states the maximum was in Rhode Island, $1,459 per c the minimum in Maine, $740. In the South Atlantic states the maximum was in land (excluding the Federal District), $1,043 per capita; the minimum in South Ca $348.

Now it is perfectly well understood that a good modern system of state educatio be supported only at great public cost. Still more, the cost is all the time incre Our total expenditures for this purpose the last twenty years have been mounting u by leaps and bounds. At present the money expended by the states together is ; 000,000 annually, which is more than twice the cost of supporting the national g ment before the Civil War. Education has come to be a great item in the budget of highly civilized country in the world.

Fourthly, the character of the population in respect to its money-earning powe be taken into the account. The size of the average family and the relative numb taxpayers, or the adult males, and their productiveness as economical agents, all be educational factors of much importance. If families are large, the number of child be schooled is proportionally great; which, under some conditions, would add t efficiency of the schools, and under other conditions would increase their cost. The larger the relative number of adult males, and the greater their producing powe higher their intelligence and educational needs, and the greater their ability to pr the sinews for educational warfare. We need not enter into the correlation of the s the family and its material condition. It still remains true, however, as in the ti Solomon, that the destruction of the poor is their poverty. In respect to educationa sibilities there is the greatest difference between a community having a high ratio of male population of large wealth-producing power and a community having a small of such population with small wealth-producing power. The country taken togeth 1890–91 showed surprising variations in this respect. There were 91.4 taxpayers fo 100 children six to eighteen years of age; but in different sections the ratio varied fron to 156.0 in the South Central states to 156.7 to 100 in the western states. In South Ca there were but fifty-five adult males to earn the money with which to school 100 chi thirty-two of whom were colored men. Comparing the taxpayer factor with the per-c tax for education, some very striking results are obtained. Dr. Harris has shown in Montana a contribution of $5.85 per taxpayer furnished in 1890–91 $16.02 for child of school age, while in Texas a contribution of $6.55 per taxpayer produced a of only $4.48 for each child. Mississippi, after raising per taxpayer about half Nevada raised, had only about one-eighth as much as the latter state for each ch school age. The causes that affect the ratio of school children to the adult populatio beside the present inquiry. But it is perfectly obvious that this is an educational fac much value.

Little logical acumen is required to see either the educational value or the congruence of such *factors as the* wealth per capita of the country or of any state

[1] *Report of the Commissioner* of Education, 1890–91, p. 24.

the expenditure per capita for public education, the expenditure for the same purpose per pupil in the schools, and the per cent. of illiteracy, taking the population ten years old and more into the account. These items are shown in the following table:

North Atlantic States,	$1,132	$2.06	$23.65	6.2
South Atlantic States,	579	.96	8.25	40.1
North Central States,	1,129	2.81	19.96	6.7
South Central States,	583	.98	7.59	39.5
Western States,	2,250	3.55	34.03	11.6

It must be remembered, however, that these statistics are, in part, now several years old.

Perhaps I should observe that statistics may be taken too seriously. We need not now examine the arguments by which Mr. Buckle and others like him have sought to show that man has no free agency, but that society is governed in all its movements by laws as fixed as those of material nature. It answers the present purpose to say that the highest state of education is not always found in the most populous, the richest, or the most homogeneous states. France is much richer than Germany, but she is inferior in education. England is far richer than Scotland, and has been behind her in schools of popular education since the time of John Knox. Relatively, Rhode Island is the richest and most populous of the American states, but she has never led the American common-school column. There are other factors than those that are distinctly social which enter into the problem. Educational traditions and ideas, public spirit, and force of character all tell. At the same time it would be the sheerest folly to exclude or belittle the material factors that enter into public education and all similar social interests.

APPENDIX B.

PERMANENT SCHOOL FUNDS.

I. CONNECTICUT.

It began to be noticed as early as 1824 that the Connecticut common-school fund was not working altogether as it had been expected to work. (See James G. Carter's "Letters to the Honorable William Prescott, LL.D., on the Free Schools of New England, with Remarks upon the Principles of Instruction," Boston, 1824.) Connecticut, however, made the fatal mistake of distributing the income of the fund to the towns and districts without requiring them to raise by taxation an equal amount, or, indeed, any certain amount, for the support of their schools. In 1853 Connecticut was expending on her schools only one-third as much per pupil as the neighboring states were expending, while she was raising by taxation only one-tenth or one-twentieth part as much as they were raising per pupil. Dr. Henry Barnard says: "Taxation for school purposes had not only ceased to be a cheerful habit of the people, but was regarded as something foreign and anti-democratic. The supervision of the schools had become in most societies a mere formality, and the whole system seemed struck with paralysis." And yet the governor of the state had sounded the alarm as early as 1826, while prominent citizens had counseled other states not to repeat the mistake that Connecticut had made. (See a valuable article on the Connecticut School Report, subhead, "The School Fund and Its Effects," in *The American Journal of Education and School Review*, edited by Absalom Peters and Henry Barnard, Vol. I. (1856), pp. 590–9.)

II. TEXAS.

Mr. C. Lombardi, member of the school board of Houston, Tex., contributed to *The Business Record* of that city, November, 1896, the following article, entitled "Our *School Fund*":

First of all comes the question of revenues. While we have been boasting of o princely educational fund, consisting of millions of acres of land, we have forgotten inquire into the location, character, and value of this land. It was long taken f granted that any kind of wild land would increase in value as time passes. It w argued that as the amount of land in any country is a fixed quantity, and as populati tends to increase steadily, land could not but increase in value as population increas But a rude shock awaited these plausible theories when suddenly land values began decline, not only here, but everywhere, in other states as well as in Texas, in Europe well as in America, along with the depreciation of agricultural products. Many circu stances led to this result, chief of which is the long interval of peace among civiliz nations, thus liberating and increasing an immense productive force, formerly large devoted to the destruction of both life and the means of life; the facilities and chea ness of transportation, and the opening up of immense tracts of land in other portio of the world, made accessible to cheap labor. It was found that the most abunda commodity in the universe is raw, untilled land.

Then as to the character of the land set aside for our school fund. Time was wh any kind of land was supposed to have some value, if only for pasturage or mining pu poses. Here again a revolution has taken place, making wild grazing lands almo valueless, and mining lands in this state quite so. The demand for range cattle has be transferred to the domestic-fed cattle raised on small farms, and our great cattle indust of the past has practically passed away.

As for mining lands containing iron, copper, and coal, the great abundance of these found nearer to market and closer to lines of transportation, together with t greater facilities for working old mines afforded by modern invention, and the agitati for a lower tariff policy throughout the South, has put a quietus to any thought of dev opments or investments in Texas for some time to come.

Hence, while our school fund derived from the sale and lease of land has n increased in value, the scholastic population has largely increased, and the financi demands for public education are increasing every day. They are increasing not on by reason of the natural increase of the scholastic population, but also by reason of t very progress achieved in educational methods and the higher ideal attained. Not on has this higher ideal induced more people to send children to school, but it is deman ing a higher standard of ability and character in the teachers, and this costs mo money.

What is the remedy? Obviously special taxation as a supplement to our reven from the school fund. Either that or a curtailing of our school facilities, and this last not to be thought of. But here again we labor under a singular disadvantage from t fact that we have a school fund, that we have exaggerated its importance and value, a indulged in extravagant boasts about it. Our people have become too much accustom to rely on this great school fund, and will be unwilling to entertain the idea of raising school revenue by taxation. Had we never had a school fund, or never talked about our people would probably not hesitate to tax themselves heavily for the benefit of t schools, as do the people of Colorado, for example. But it will be difficult to reconci the glory of our great school fund, which has been dinned into the taxpayer's ears, wi the necessity of going deep into his pockets to supply the educational deficit.

It is just as well that we should begin to consider this matter and bring it befo the people. It is bound to become an issue sooner or later, and the sooner the bett We must not wait until we are confronted with a deficit so great as to paralyze our schoo and destroy their efficiency. Other things demand the attention of the friends of popul education, but this is fundamental.

RECEIPTS OF SCHOOL MONEYS.

[From the Report of the Commissioner of Education, 1894–95.]

State or Territory	From permanent funds (income and rents)	From taxation			From all other sources	Total revenue (excluding balance on hand and proceeds of bond sales)
		From state taxes	From local taxes	Total from taxation		
1	2	3	4	5	6	7
United States	$8,336,612	$33,252,941	$119,019,984	$152,272,925	$16,988,154	$177,597,691
North Atlantic Division	620,882	12,532,368	44,143,714	56,676,082	7,413,662	64,710,626
South Atlantic Division	441,619	4,032,340	5,435,338	9,467,678	680,486	10,589,783
South Central Division	1,944,798	6,332,407	4,153,512	10,485,919	666,703	13,097,420
North Central Division	4,589,521	7,618,618	58,006,497	65,625,115	7,099,015	77,313,651
Western Division	739,792	2,737,208	7,280,923	10,018,131	1,128,288	11,886,211
North Atlantic Division:						
Maine	a 46,040	516,698	1,265,090	1,781,788	0	1,827,828
New Hampshire (1893–94)	14,753	86,817	729,176	815,993	60,963	891,709
Vermont	48,622	93,556	680,580	774,136	68,225	890,983
Massachusetts	b 175,944	0	10,469,368	10,469,368	16,044	10,661,356
Rhode Island	9,105	118,834	1,163,720	1,282,554	55,162	1,346,821
Connecticut	168,870	255,883	1,850,316	2,106,199	183,205	2,458,274
New York	30,312	3,856,804	13,865,890	17,722,694	3,473,141	21,226,147
New Jersey	127,236	2,119,460	2,261,513	4,380,973	101,565	4,609,774
Pennsylvania	0	5,484,316	11,858,061	17,342,377	3,455,357	20,797,734
South Atlantic Division:						
Delaware (1889–90) a	60,000	c 6,000	209,000	215,000	0	275,000
Maryland	55,323	583,974	1,454,051	2,038,025	142,255	2,235,603
District of Columbia	0	0	953,155	953,155	0	953,155
Virginia	43,804	930,548	805,025	1,735,573	44,911	1,824,288
West Virginia	35,134	318,506	1,089,197	1,407,703	196,646	1,639,483
North Carolina (1893–94)	0	646,543	13,323	659,866	117,213	777,079
South Carolina	0	437,143	75,918	513,061	35,020	548,081
Georgia (1893–94)	212,052	1,008,752	389,702	1,398,454	64,019	1,674,525
Florida (1893–94)	35,306	100,874	445,967	546,841	80,422	662,569

South Central Division:						
Kentucky	144,817	1,707,438	1,537,854	3,245,292	0	3,390,109
Tennessee (1893–94)	143,602	1,252,333	(*d*)	1,252,333	192,442	1,588,277
Alabama (1893–94)	115,887	513,674	*e* 141,861	655,535	9,531	780,953
Mississippi	77,946	923,500	176,256	1,099,756	44,706	1,222,408
Louisiana	48,385	213,550	582,077	795,627	232,964	1,076,976
Texas (1893–94)	1,379,361	1,269,679	764,464	2,034,143	181,906	3,595,411
Arkansas	34,800	396,308	860,000	1,256,308	0	1,291,108
Oklahoma (1893–94)	0	*a* 56,025	*a* 91,000	147,025	5,153	152,178
North Central Division:						
Ohio	251,569	1,740,228	9,682,324	11,422,552	751,205	12,425,326
Indiana (1893–94)	583,331	1,915,240	3,623,096	5,538,336	1,797,253	7,918,920
Illinois	638,905	1,000,000	13,649,780	14,649,780	623,979	15,912,664
Michigan (1893–94)	*a* 312,000	*a* 702,384	4,331,515	5,033,899	847,089	6,192,979
Wisconsin (1893–94)	*a* 190,000	*a* 584,145	3,510,066	4,094,201	450,612	4,734,813
Minnesota	418,172	733,543	2,894,850	3,628,393	578,551	4,625,116
Iowa	235,663	0	7,280,107	7,280,107	942,978	8,458,748
Missouri	838,339	685,174	4,735,498	5,420,672	66,364	6,325,375
North Dakota (1893–94)	154,126	152,867	630,431	783,298	53,715	991,139
South Dakota (1893–94)	146,220	0	1,006,968	1,006,968	186,669	1,339,856
Nebraska	367,029	105,037	2,303,970	2,409,007	681,033	3,457,069
Kansas	454,167	0	4,357,902	4,357,902	119,576	4,931,645
Western Division:						
Montana	0	0	524,789	524,789	36,616	561,405
Wyoming	0	0	181,766	181,766	4,727	186,493
Colorado (1891–92)	108,463	0	1,462,109	1,462,109	753,182	2,323,754
New Mexico	0	0	119,673	119,673	46,126	165,799
Arizona (1893–94)	*a* 5,770	*a* 156,400	*a* 43,400	*a* 199,800	*a* 41	205,611
Utah	0	276,195	504,304	780,499	62,096	842,595
Nevada (1893–94)	98,002	11,941	83,770	95,711	1,080	194,793
Idaho (1893–94)	14,331	0	303,641	303,641	2,794	320,766
Washington	90,278	0	924,715	924,715	14,293	1,029,286
Oregon (1893–94)	162,948	0	744,397	744,397	140,404	1,047,749
California (1893–94)	*a* 260,000	2,292,672	2,388,359	4,681,031	66,929	5,007,960

a Approximately.
b Includes tax on dogs, etc.
c State appropriation for colored schools.
d Not reported; a part is included in "other sources."
e Report incomplete.

APPENDIX C.

THE CALIFORNIA SYSTEM OF SCHOOL MAINTENANCE.

Every portion of this state is embraced in the 3,243 school districts into which California is at present (1896) divided. Under our law every city and incorporated town constitutes a separate school district, unless subdivided by the legislative authority thereof. Only two cities of the state are subdivided into separate school districts.

SOURCES OF REVENUE.

STATE—

(1) *Permanent Fund.*—The permanent school fund of the state consists of the receipts from the sales of school lands (sections 16 and 36 of each township), and now amounts to $4,000,000. The interest on this fund, together with the interest on school land, yields an annual income amounting to $260,000, or more.

(2) *Poll Tax.*—There is a state school poll tax of $2 levied on each male inhabitant, between the ages of twenty-one and sixty years. From this source the state school fund receives nearly $370,000 annually.

(3) *Collateral Inheritance Tax.*—There is a tax of 5 per cent. on collateral inheritances, which is paid into the school fund of the state. The amount received from this source, of course, varies from year to year.

(4) *State School Tax.*—The statutes require that there be levied on all property in the state an ad-valorem tax sufficient to raise the sum of $7 yearly for each census child. On account of the allowance made in levying the tax for possible delinquencies, the actual sum realized is somewhat in excess of $7 per child.

The revenue derived from these four sources for the fiscal year ending June 30, 1896, was:

(1) From Permanent School Fund,	$264,429.00
(2) From State Poll Tax,	362,794.12
(3) From Collateral Inheritance Tax, etc.,	102,688.45
(4) From State School Tax (ad valorem),	2,320,270.08
Total State Moneys,	$3,050,181.65

The school census for the year was 323,130. The average, therefore, per census child from all state sources was $9.43.

COUNTY—

Each county is required by law to levy a county school tax, the maximum rate of which shall not exceed 50 cents on each $100 of taxable property, nor the minimum rate be less than sufficient to raise $6 for each census child in the county.

DISTRICT—

The charters of cities having boards of education provide for the levying of school taxes within the corporate limits, in addition to the state and county school taxes.

School districts governed by boards of school trustees may, by vote of the people, levy additional taxes for school purposes, the maximum rate being fixed at 30 cents on each $100 of taxable property. They may also, in any year, levy a tax of 70 cents per $100 for building purposes.

BONDS—

Any school district in the state may, by a two-thirds vote, bond itself for the purchase of lots, erection of buildings, etc.

The constitution and law of the state require that all property shall be assessed at

its "full cash value." The word "property," as defined in the constitution, includes "moneys, credits, bonds, stocks, dues, franchises, and all other matters and things real, personal, and mixed, capable of private ownership."

DISTRIBUTION OF SCHOOL FUNDS.

For the purpose of fixing a primary base for the distribution of school funds, there is taken, during the month of April, each year, a census of all the children in the state between the ages of five and seventeen years. The term "census children" must not be confounded with the term "children of school age," as the latter embraces all children between the ages of six and twenty-one years.

The method of distribution is unique, combining, as it does, the enumeration and average daily attendance methods. Its strong point is the marked recognition it gives to the principle that the state, as a whole, is interested in the education of all its citizens. To that end the rich and populous centers are made to contribute to the poor and sparsely settled districts. At the same time the local and county taxes imposed are a constant reminder that each locality must share with the state the responsibility of educating its youth.

All state school moneys are apportioned by the superintendent of public instruction to the several counties in proportion to the number of school-census children, as shown by the returns of the school-census marshals of the preceding school year, and the moneys so apportioned are distributed to the several county treasurers by the state treasurer, on the order of the state superintendent.

The county school funds are collected by the county tax collector, and turned over by him through the county auditor to the county treasurer, who is the custodian of all school funds. It is the duty of each county auditor to notify the county superintendent of schools of all school moneys received — both state and county. The entire revenue is distributed by the county superintendent of schools to the various school districts (including cities) on the basis of the number of teachers to which each district is entitled. This number is determined by calculating one teacher for every seventy census children, or fraction thereof of not less than twenty census children, in the district. He then apportions to each district $500 for every teacher assigned to it. Should a district have less than twenty and more than nine census children, he must apportion to it only $400. Districts having less than ten census children lapse, unless supported by voluntary contribution. Such districts usually lapse, their territory being absorbed by adjoining districts. This provision of the law is not intended to govern the number of teachers actually employed by a district; it simply furnishes a basis for determining the amount of money to which a school district is annually entitled from the public funds.

All school money remaining on hand after distributing $500 (or $400, as the case may be) per teacher is apportioned to the several districts in proportion to the average daily attendance in each district during the preceding school year. The amount varies in the different counties, ranging from $2 or $3 per child in average daily attendance in a few sparsely settled counties to $10 or $12 in the more densely populated. The average for the entire state is not far from $8 for every child in average daily attendance.

In distributing the school money the county superintendent considers each city in the county, no matter how large, simply as a school district, which it is under the law; and for this purpose each city superintendent must report school statistics to the county superintendent, just as does the teacher in the most insignificant district in the county.

As an illustration of the method of distribution, suppose district "A" has a census roll of 1,000 children, and an average daily attendance of 600 for the preceding school year. The county superintendent discovers from the school statistics in his office, after apportioning $500 for each *teacher in the* county, that the amount per child in average daily attendance is $8. *Dividing 1,000 by 70*, we find that "A" is a "fifteen-teacher district." Five

hundred dollars multiplied by 15, plus $8 multiplied by 600, equals $12,300, the amount that "A" receives in a year from the state and county school funds.

As before remarked, the treasurer of each county is the custodian of all school funds; all orders on said funds drawn by the local district or city authorities must pass through the hands of, and be approved by, the county superintendent before they can be paid by the treasurer.

It might be urged that such a system, while it guards the educational rights of children in the poorer districts, may overstimulate a desire for the creation of new school districts. It has that tendency, but the state has thrown some safeguards around it (although perhaps not yet sufficient) by imposing certain restrictions upon the creation of new districts in the way of distance from the nearest schoolhouse and the minimum number of census children required. Under the law the schools of the state are enabled to maintain an average of eight and seven-tenths months per year.

SAMUEL T. BLACK.

Sacramento, Cal.

APPENDIX D.

THE COUNTY AS THE UNIT OF SCHOOL ORGANIZATION.

The following paragraphs are from an article by Mr. Lawton B. Evans, Superintendent of Schools for Richmond county, Ga. (See the *Educational Review*, April, 1896.)

I believe very firmly that the county or township is the proper unit of educational organization. If one system of schools can be made to extend over a whole county, including the city and villages, the organization will be upon a basis of territory. By this means the entire country can after awhile be brought under a uniform organization. So long as the organization is by cities we merely organize by locality, which can never be uniform or entire. It will always remain a one-sided development. A proper policy is to induce the people hereafter to organize by area rather than by spots. The effect of this will be to give to the rural child the same school advantages as to the city child, and there is every reason in equity and good sense why these advantages should be the same.

I come from an illustration of this kind of organization, and it may not be amiss to tell something of the schools of Richmond county, Ga., in which county is situated the thriving city of Augusta. Here for the past twenty-five years has been in operation what is known as the county system.

One board of education, composed of representatives elected by the people for a term of three years, one-third of the membership expiring every year, has charge of the entire school interests of the city of Augusta and of the county of Richmond. This board of education has the unique power of levying a school tax directly upon the people of the county, without revision by any other authority and without any limit as to rate or amount. The school tax is levied and collected as a uniform rate upon all property of the county, whether it is in the city or out of it. This forms the general school fund of the county, supplemented by the state appropriation.

When it comes to the distribution of this fund no regard is paid to the amount raised by any ward of the city or any district of the county, but the fund is distributed according to the necessities of each ward and district, determined by the number of children to be educated. The school fund of the whole county is raised by a tax on all the property of the county, and is distributed upon the basis of the school population of each community. *Thus it happens* that a community rich in naught else but children will get a flourishing school paid for by its wealthier but less fortunate neighbors.

As a matter of fact, a large part of the money paid by the city is annually spent in

the rural districts, for the city has nine-tenths of the taxable property, but only thr fourths of the school population. So it happens that the rural schools pay one-tenth the school tax and receive the benefit of one-fourth of it. Augusta has spent in the p twenty years the sum of $200,000 in building schoolhouses and paying school-teachers the children who live in the country districts around her. Augusta has shown her fa in the proposition that every city needs to be environed by an intelligent, industrious, a contented population.

When it comes to the teachers the same qualifications are demanded for rural scho as for city schools. Upon the regular examination terms, and upon issuing of licen to teach, an applicant does not know whether he will teach in the city or out of it, and many it is a matter of indifference. And I know whereof I speak when I say that th are young women graduates of normal colleges doing high-grade work in country scho ten miles beyond the limits of the city, and doing it happily and cheerfully. We beli firmly in the further proposition that a country school is entitled to as good a teacher a city school, and that those who live in the fields are as deserving of education as th who dwell beside the asphalt. Carlyle must have had a country child in his mind wl he said: "This I consider a great tragedy: that one soul should remain in ignorance t had capacity for higher things."

The teachers are treated as nearly alike as can be. City and country teachers paid about the same salary. They get it at the end of every month and on the sa day. The certainty and the regularity of a fixed compensation create a sense of secur safety, and comfort for a teacher, and accordingly increase his efficiency. No teac can do his best work when he works at starvation rates, is paid once every th or four months, and often in scrip that he must discount. There is much philosophy a also economy in the maxim that advises us to pay a public servant well and watch l closely. So we draw no distinction of locality. First-class work is worth as much twe miles from town as it is in the heart of the city.

The schools of the county all run nine calendar months. They all begin at the sa time and close at the same time. During the last year every child of the county, rega less of where he lived, was offered nine months of actual tuition.

So far as schoolhouses are concerned, these are located in rural districts so as to on an average of four miles apart. No child is out of walking distance of a school o nine months in the year and taught by a good teacher. These houses are owned by board of education and cost from $300 to $2,500 each, according to size and equipmen

One superintendent has charge of all the teachers in the county. The same deg of efficiency that should attend the supervision of city schools is likewise extended to country schools. An expert teacher for all is the theory, and, so far as human effort avail, it is carried out in practice. The same course of study is prescribed for the pup and the same course of professional reading is required of the teachers. The teacher the city schools meet for instruction once a week, the teachers of the country schools m once a month, and in addition have a two-months' institute in the summer months.

APPENDIX E.

COMPARATIVE COST OF THE TOWNSHIP AND DISTRICT SYSTEMS

The subcommittee has made diligent inquiry as to the relative cost of the townsl unit and independent-district systems of carrying on common schools. Naturally, it difficult thing to come at, as the elements entering into the problem are so fluctuati Some *testimony is presented* below from three well-known state-school executive *given in response to the inquiries* of the committee.

I. FRANK A. HILL, Secretary of the Massachusetts State Board of Education:

I do not think it will be possible without a great deal of special investigation to furnish figures or statistics to show that the town plan is either cheaper or more expensive than the district plan. The expenditures for schools in Massachusetts have been gradually increasing, because of better buildings, better sanitation, better equipment, better teachers, and better salaries. I have a strong conviction, however, that the same amount of money may be made to go much further under town management than under district in the way of securing greater efficiency in the schools.

We are consolidating our scattered and thinly attended schools quite extensively in our rural towns, and transporting the children. In this way towns frequently save a little money, while providing better accommodations and securing better teachers. But the argument we use in favor of such consolidation is not the economical one; it is the educational one, rather, that the school efficiency is thus increased.

II. CHARLES D. HINE, Secretary of the Connecticut State Board of Education:

It is hardly right to say that the district system [in Connecticut] is an independent system. The town still remains the unit of financial management. All money from the state treasury goes to the town, is added to the town tax, and then is distributed by the town board of apportionment to the several districts. In only 138 of the 1,400 districts is a tax laid. These districts have the power to tax themselves, but you will see that they seldom exercise it. A few districts, probably not more than twenty-five, support their schools in part by district tax. The remainder of the districts mentioned have taxed themselves for occasional expenses, like insurance, repairs, or perhaps for building a schoolhouse.

As to the cost of the two systems, ... it must always be said, and I impress that upon those to whom I speak, that the two cannot be justly compared, except by going over a period of years. When towns enter upon the town system, they are likely to increase expenses, if their previous expenses have been stingy and inadequate. On the contrary, if under the district system they have been liberal, the economy which the town system permits will enable them to reduce their expenses. It follows, then, that you would have to know the policy under the district system before you could judge whether the town system had made a difference in the case. The tendency in the large districts in this state is to become practically independent, and to support the schools liberally under the district system. There are advantages of directness, power to borrow money, etc., which make it possible to secure liberal appropriations in large districts. The tendency in small districts is to diminish the cost because there are few children.

As a result, taking the average district, the town system shows in this state very much better schools, so far as instruction is concerned, as well as more efficient administration. It would be impossible, of course, to illustrate this by numerous examples. We have not been able to secure legislation compelling all towns to accept the town system. We are, however, advancing slowly toward that result by popular vote. In the last year eleven towns voted to adopt the town system, and now, out of 168, fifty-four are under town systems. It comes slowly, but it is coming as a result of a change of heart and of an endeavor to make better schools.

III. W. W. STETSON, State Superintendent of Schools, Maine:

There is some justice in the claim that the district system is, in one sense, cheaper than the township system. Under the district system the schools were maintained for a much less number of weeks than under the town system, especially in small districts. *When we were running* under the district system, patrons of the schools were willing *to bid off the board for less* than a dollar a week; sometimes they boarded the teacher *without expense to the* district, and also furnished wood, repaired the schoolhouse, and

kept it in proper condition generally. It was possible to have longer terms, because these contributions.

Under the township system the town pays for the teacher's wages and board, and h to provide the wood, make the repairs, furnish a janitor, and provide for keeping the hou clean. Shorter terms and donations made the old district school cheap in the sense using but a small amount of money. It was also cheap in another sense. It was usua taught by some indigent relative of the agent. But in Maine we are not entirely free fr this curse, even under the township system. We have discovered that 872 of the 4,6 teachers of Maine are related to or connected with the members of the superintendi school committees in such a way as to have an unsafe influence in securing their appoi ments. There can be no question but that for an equal length of terms, if all the servi rendered and materials furnished are paid for, the township system is much m economical than the district system. It is also true that when the conditions prevail t are indicated above, in the matter of money, the district system may be cheaper.

APPENDIX F.

TRANSPORTATION OF PUPILS.

The declining population of many towns and counties, and even larger distri affects the rural schools very unfavorably. (See *Appendix A.*)

I. Hon. C. R. Skinner, State Superintendent of Public Instruction of the State of N York, thus forcibly urges the need of consolidation in the schools of that state:

"In 1860 the school population of the state outside of its cities was 894,432. the close of the school year of 1895 the school population of the state outside of its cit and villages containing upwards of 10,000 people was 609,146, a decrease of 285,286, upwards of 31 per cent., while the number of school districts in 1860 was 11,358. Wh the number of school children has decreased during that time nearly one-third, there h been substantially no decrease in the number of rural districts. It needs no argument show that the antiquated school-district system, which served the people so well in 18 has outgrown its usefulness, and that, if the state of New York desires to keep pace w adjoining states in the advancement of her educational interests, some new system m be devised.

"The township system, or some unit larger than the present system, in my judgme is the only solution of the difficulty, and until the state shall have adopted that syst its rural schools will continue to decline in efficiency. There is, in my opinion, no bet school in America than the union free school and village school of our state, but t results there obtained cannot possibly be achieved in the weak rural districts, where t average attendance is less than twenty pupils, and, as shown above, in nearly 3,000 d tricts less than ten. The ambitions and rivalries of the students — incentives to grea exertion on the part of the pupils — which prevailed thirty-five years ago in these coun districts no longer exist. The school is lifeless, cannot be graded, there is little enthu asm among the students, and that activity and earnestness which come from numbers a entirely lacking." (Report for 1894–95, pp. x, xi.)

II. The arguments for the reform have been luminously stated by Mr. A. W. Eds one of the Massachusetts state agents, as follows (Fifty-eighth Annual Report of t Massachusetts Board of Education, 1893–94, pp. 215–17):

Consolidation and Transportation.—There is a decided tendency on the part of int ligent and progressive communities to close the small schools in remote districts and transport children to the graded schools of the villages, where better classification, be

rading, and better teaching are the rule. This is done not so much from an economic tandpoint as because of the firm conviction that the children receive greater educational dvantages there than in the small, ungraded schools.

The number of children in the back districts is small, and growing less every year. Vith few children and small classes there can be but little enthusiasm and progress.

The leading arguments in favor of the movement are:

1. It permits a better grading of the schools and classification of pupils. Consolida- on allows pupils to be placed where they can work to the best advantage; the various ubjects of study to be wisely selected and correlated, and more time to be given to reci- ation.

2. It affords an opportunity for thorough work in special branches, such as drawing, usic, and nature study. It also allows an enrichment in other lines.

3. It opens the doors to more weeks of schooling and to schools of a higher grade. he people in villages almost invariably lengthen the school year and support a high chool for advanced pupils.

4. It insures the employment and retention of better teachers. Teachers in small, ngraded schools are usually of limited education, training, or experience, or are past the ge of competition. The salaries paid in cities and villages allow a wide range in the election of teachers.

5. It makes the work of the specialist and supervisor far more effective. Their plans nd efforts can all be concentrated into something tangible.

6. It adds the stimulating influences of large classes, with the resulting enthusiasm nd generous rivalry. The discipline and training obtained are invaluable.

7. It affords the broader companionship and culture that come from association.

8. It results in a better attendance of pupils, as proved by experience in towns where he plan has been thoroughly tried.

9. It leads to better school buildings, better equipment, a larger supply of books, harts, maps, and apparatus. All these naturally follow a concentration of people, wealth, nd effort, and aid in making good schools. The large expenditure implied in these better ppointments is wise economy, for the cost per pupil is really much less than the cost in mall and widely separated schools.

10. And, again, it quickens public interest in the schools. Pride in the quality of the ork done secures a greater sympathy and better fellowship throughout the town.

Mr. Edson reports that the following objections have been made in Massachusetts:

1. Depreciation of property; decreased valuation of farms in districts where schools re closed.

2. Dislike to send young children to school far from home, away from the oversight f parents; and to provide a cold lunch for them rather than a warm dinner.

3. Danger to health and morals; children obliged to travel too far in cold and stormy eather; obliged to walk a portion of the way to meet the team, and then to ride to school n damp clothing and with wet feet; unsuitable conveyance and uncertain driver; asso- iation with so many children of all classes and conditions; lack of proper oversight dur- ng the noon hour.

4. Insufficient and unsuitable clothing; expense to parents of properly clothing their hildren.

5. Difficulty of securing a proper conveyance on reasonable terms, or, if the parent s allowed compensation, of agreeing upon terms satisfactory to both parties, parents and *own officials.*

6. Local jealousy; an acknowledgment that some other section of the town has *ater advantages* and is outstripping any other locality.

7. Natural proneness of some people to object to the removal of any ancient land-

mark or to any innovation, however worthy the measure or however well received elsewhere.

To these objections Mr. Edson, who is one of the most competent of authorities, replies:

The first one is more imaginary than real, for any level-headed man with children to be educated will place a higher value on the quality of the schools and the school spirit in the community than upon the number and accessibility of the schools. Experience has demonstrated the fact that property in towns committed to this plan has appreciated rather than depreciated in value.

The second and third objections are the most serious. It behooves school authorities to see that the danger is reduced to a minimum. Suitable conveyances, covered, should be provided, and competent, careful drivers selected. No risks should be taken. During the noon hour some teacher should remain with the children who carry luncheon.

The fourth, fifth, and sixth objections have no great weight. The last one has great influence with those people who choose to live, move, and die as did their ancestors, on the theory that this is the last generation, and that any special efforts at improvement are just so much more than is wise or necessary.

III. The experiment in consolidation now in progress in northeastern Ohio is of such interest and promise as to warrant extracts from the annual reports for 1895–96 of the two superintendents who have been most prominent in the work. This recent movement may have an interest for some minds that earlier movements would not possess.

1. Extracts from the report of Mr. F. E. Morrison, Superintendent of Kingsville, Ashtabula county:

The new school system, which is known as the Kingsville system of education, has been formulated and introduced with marked success.

By this system the pupils of the subdistricts are given the same advantages for obtaining an education as the village pupils, and this result has been obtained without working any disadvantage to the village pupils, for we have been enabled to open a new room and supply another teacher in the village schools, thus reducing the number of grades in each room and giving all the pupils better school advantages. We have sufficient room yet for several more pupils without crowding the rooms.

The pupils of the subdistricts have not only been given the advantage of more extended associations and larger classes with which to recite, but they have also the advantages of a school where the teacher has fewer recitations and can give more time and attention to each recitation; thus the pupil's progress is much more rapid than is possible in a school where there are three times as many classes and one-sixth the number of pupils. It is a fact that the work of the teacher depends more upon the number of classes to recite than the number of pupils in attendance. It is a pleasure indeed to note that the attendance in the subdistricts that have availed themselves of the new system has increased from 50 to 150 per cent. in some cases, and a larger increase in all cases; the daily attendance in the same subdistricts has increased from 50 or 60 per cent. to 90 or 95 per cent., thus increasing greatly the returns from the school fund invested. This has been accomplished at a saving of more than one thousand dollars to the taxpayers in the three years.

The Board of Education and citizens of Kingsville are to be congratulated for their progressive and energetic spirit in being pioneers in formulating and placing in operation a system of education superior to any in the state of Ohio, and which is to be the system of the future. The Board of Education has been enabled, under the new school law, to conduct its financial matters by better business methods, buying its supplies in quantities *and letting its contracts* on competitive bids, and by centralizing the schools *thus saving many needless* expenses.

Since the schools were centralized the incidental expenses have decreased from $800 to $1,100 per year, to from $400 to $600 per year. All other expenses have also decreased, which may be seen from the following table compiled from the clerk's records:

EXPENDITURES OF THE BOARD OF EDUCATION OF KINGSVILLE, O.

1889–90,	$3,248.05
1890–91,	3,716.23
1891–92,	3,183.54
Total for three years,	$10,147.82
1892–93,	$3,153.44
1893–94,	3,072.73
1894–95	2.831.20
Total for three years,	$9,057.37

In giving these figures we have deducted the $600 with interest which was borrowed in 1889, and has been paid during the past three years.

It should be mentioned also that the permanent improvements made by the Board of Education during the past three years are nearly double the amount made during the preceding three years.

2. Extracts from the report of Mr. J. R. Adams, Superintendent of Madison Township, Lake county.

In my report to the board one year ago I called attention to the very low average attendance in some of our schools, the great expense per capita of educating the pupils in those small schools, and to the fact that, on account of the lack of interest and enthusiasm therein, good results could not be obtained, and suggested the plan of consolidation as the proper solution to the difficulties.

Acting upon my suggestion, the board, having in view only the best interest of the children for whom our schools exist, voted to consolidate three subdistricts at North Madison, No. 16 and No. 3 with No. 12, and also three at Unionville, No. 10 and No. 11 with No. 4, arrangements being made with the school board of Harpersfield township whereby the pupils of Subdistrict No. 1, of said township, might attend the school at Unionville upon payment by the Board of Education of Harpersfield to the Board of Education of Madison township the sum of $140 tuition.

Our school opened with two teachers and with an attendance of ninety-three pupils. This was certainly more than the number for which we had planned, and was a great surprise to me, for from No. 10, in which subdistrict there had been the previous year an attendance of only ten pupils, there came eighteen; from No. 11, in which there had been an attendance of only eight pupils, there came eighteen, and from the Harpersfield district, in which there had been an attendance of fourteen pupils, there came twenty-three. The number of pupils enrolled in this school was 107, with an average attendance of seventy-three.

Having tried the new plan for a year, it is no longer an experiment, but an experience with us; therefore, let us now candidly look at the results. First, I wish you to know what the patrons of the consolidated school think of the plan, and then to give you, as briefly as I can, some of my own observations. All the patrons in the school of Subdistrict No. 10 of Madison, and in Subdistrict No. 1 of Harpersfield, have signed a paper stating that they are well pleased with the plan and its results, and asking their respective boards to continue the plan another year. While there has been no canvass at Unionville, Subdistrict No. 4, to ascertain what the people there think of the plan, yet, *from what I have heard*, I am confident that they are unanimous in its support. The *foregoing represents the* opinion of patrons who send eighty-nine of the 107 pupils to *this school. A large* majority of the patrons in Subdistrict No. 11, who send eighteen

of the 107 pupils to the school in question, have publicly expressed themselves as being dissatisfied with the plan, and that under it their children have not received the educational advantages which they ought to have received. Further comment is unnecessary.

Following are some of the good results which have come under my personal observation:

1. A much larger per cent. of enumerated pupils enrolled.

2. No tardiness among the transported pupils.

3. Irregular attendance reduced, the per cent. of attendance of transported pupils from two subdistricts being each ninety-four per cent., the highest in the township.

4. Pupils can be better classified and graded.

5. No wet feet or clothing, nor colds resulting therefrom.

6. No quarreling, improper language, or improper conduct on the way to and from school.

7. Pupils under the care of responsible persons from the time they leave home in the morning until they return at night.

8. Pupils can have the advantage of better schoolrooms, better heated, better ventilated and better supplied with apparatus, etc.

9. Pupils have the advantage of that interest, enthusiasm, and confidence which large classes always bring.

10. Better teachers can be employed, hence better schools.

11. The plan insures more thorough and complete supervision.

12. It is more economical. Under the new plan the cost of tuition per pupil on the basis of total enrollment has been reduced from $16 to $10.48; on the basis of average daily attendance, from $26.66 to $16.07. This statement is for the pupils in said Subdistricts Nos. 10 and 11.

13. A trial of this plan of consolidating our schools has satisfied me that it is a step in the direction toward whatever advantages a well-graded and well-classified school of three or four teachers has over a school of one teacher with five to eight grades, and with about as much time for each recitation as is needed to properly assign the next lesson.

I am now more thoroughly convinced than ever before that consolidation, or centralization, as it is sometimes called, is the true solution to the country-school problem.

In a private letter, of recent date, Mr. Adams says, since his report was made, consolidated schools have been established at two other points in Madison, at one place four schools, at the other three, each with two teachers. This makes five in the township (which is a very large one, owing to the "gore" on the lake). Five teams are employed to transport pupils, at a cost of about $1 a day for a team. Every conveyance carries about eighteen pupils. There is no trouble in transporting the pupils, even the youngest, three and a half miles, which is the greatest distance. In 1895 there were eighteen schools in Madison, with an average attendance of 217; in 1896 the number was fourteen, with an average of 260; this year there are ten schools, with an average that will reach over 300. The total expense will be about the same in this township as under the old plan, but the cost per pupil will be much less. Mr. Adams adds that the new plan is rapidly growing in the neighborhood, and the belief is spreading that the new system is sure to prevail generally in northeastern Ohio.

3. The following advertisement well illustrates the care that is taken in Madison township to secure suitable transportation for school children:

NOTICE TO BIDDERS

FOR TRANSPORTATION OF PUPILS OF THE TOWNSHIP SCHOOLS.

Bids for the transportation of pupils of the Madison township schools over the following routes will be received at the office of the Township Clerk until Friday, July 24, at 12 M.:

Route A. Beginning at County Line on the North Ridge road and running west on said road to schoolhouse in Dist. No. 12.

Route B. Beginning at Perry Line on the North Ridge road and running east to schoolhouse in Dist. No. 12.

Route C. Beginning on Middle Ridge road at residence of N. Badger, running thence west on said road to the residence of Rev. J. Sandford, thence north to schoolhouse in Dist. No. 12.

Route D. Beginning at Perry Line on River road, and running thence east on said road to schoolhouse in Dist. No. 6.

Route E. Beginning at the Hartman farm, thence by Bennett road to Chapel road, thence east to A. R. Monroe's, thence west on Chapel road to schoolhouse in Dist. No. 13.

Route F. Beginning at residence of J. H. Clark and running east on Chapel road to schoolhouse in Dist. No. 13.

All whose bids are accepted will be required to sign a contract by which they agree:

1. To furnish a suitable vehicle with sufficient seating capacity to convey all the pupils properly belonging to their route, and acceptable to the Committee on Transportation.

2. To furnish all necessary robes, blankets, etc., to keep the children comfortable; and in severe weather the conveyance must be properly heated by oil stoves or soap stones.

3. To provide a good and reliable team of horses, and a driver who is trustworthy, and who shall have control of all the pupils while under his charge, and shall be responsible for their conduct. Said driver and team to be acceptable to the said Committee on Transportation.

4. To deliver the pupils at their respective stations not earlier than 8:30 A. M. nor later than 8:50 A. M., and to leave at 4:05 P. M. (sun time).

Each contractor shall give bond for the faithful discharge of his contract in the sum of $100, with sureties approved by the president and clerk of the board.

The committee reserves the right to reject any and all bids.

By order of the committee. C. G. ENSIGN, *Clerk.*

4. Hon. T. J. Clapp, an active business man of Geauga county, who has also done good service in the legislature, makes a very flattering report of this work, in private letters to the chairman of the subcommittee. He says the centralization movement is spreading rapidly; many townships are using it, and all are delighted with the result. The feeling is becoming common that the old district school does not "measure up" to the demands of the time, and that centralization is the only hope of giving to all the children the educational advantages which they need to keep pace with the city and town schools The higher educational advantages are placed within the reach of all the children. The pupils riding three and four miles to reach school come to the schoolhouse in better condition than those who walk only half a mile. Mr. Clapp remarks that in his township the old wooden schoolhouses have been abandoned, and a new brick schoolhouse has been built at the center of the town, at a cost of $6,000, large enough to hold the single township school.

IV. The following reports the first transportation experiment in this country:

Wm. T. Harris, Commissioner of Education.

MY DEAR DR. HARRIS: I received the draft of your report for rural schools; also the pamphlet in regard to carrying pupils, etc. I thank you for them very much.

I looked up the matter of carrying pupils, and send you a copy of the report from *the town of Quincy* for the years 1874 and 1875, signed by J. Q. Adams, Asa Wellington, *C. L. Badger, C. F.* Adams, Jr., Wm. B. Duggan, and Jas. H. Slade. I have no doubt but

that this is the first movement in the direction of carrying pupils in Massachusetts. You will notice that this is one year before my superintendency in Quincy. From the report of 1875 and 1876, my first report, are the following items, page 139:

Lappan Bros., conveying children, - - - -	$129.00
Joseph T. French, " " - - - - -	392.50

FRANCIS W. PARKER.

CHICAGO, ILL., December 22, 1896.

EXTRACT FROM SCHOOL REPORT, QUINCY, MASS., 1874-75.

CRANE SCHOOL.

A reference to former reports of the school committee of the town will show that for many years the condition of the little school at Germantown has been steadily unsatisfactory. Isolated and small, classification was impossible, emulation unfelt, and enthusiasm absent. Ten pupils ranged from the primer to the proper studies of a high school. The most conscientious teacher soon lost hope and energy in such surroundings. For years committee after committee has striven in vain to afford a remedy. During the past summer, the teacher, who has been laboring there for a considerable period, declared her intention of resigning in despair. The committee, profoundly dissatisfied with the backwardness and lethargy of the school, was unable to assign the fault either to the teacher or to the pupils. At the same time, it became evident that the school building was unfit for occupation during another winter without extensive repairs. It was indeed shamefully dilapidated, decayed, and dirty. Competent mechanics, after careful survey, estimated the expense of necessary repairs to be at least five hundred dollars. Besides this extraordinary outlay, the regular expense in salary, care of house and fuel, incurred to maintain this school of ten scholars, was $560 a year. And yet this large expense availed those ten scholars but little or nothing. The committee, therefore, determined to try by experiment whether or not at one and the same time in this department the outlay might be reduced and the returns increased. It ascertained that it could contract for the transportation of all the school children in that school district to the Coddington school for about $420 yearly, and it thought it probable that when there they would be aroused and stimulated by the transfer to a large and graded school. The result has fully justified its anticipations. The whole number upon the register of the old Crane school was twelve, and of these the average number of attendance was never more than ten. Now seventeen are daily transported to the Coddington school from the same territory; and so great has been their interest that the attendance among them has been almost absolutely perfect. Meanwhile, both from the reports of teachers and from personal observation, the committee is thoroughly satisfied that they are making a progress in their studies which they never had approached at Germantown. For these reasons the committee thinks it decidedly for the interest of the town, and clearly beneficial for the pupils concerned, that the present experiment should be prolonged for at least a year more. It is persuaded that this policy will approve its wisdom to those who are now most doubtful if it can be fairly tried. The day of small, ungraded, remote, and isolated schools in a town like Quincy has passed away. Only absolute necessity can now justify it. Even if the plan we recommend was as much more costly as it is really less costly than the old one, we should not hesitate to urge its acceptance as decidedly the cheaper and better.

APPENDIX G.

ENRICHMENT OF RURAL SCHOOL COURSES.

At the Chicago meeting of the Committee on Rural Schools the undersigned were appointed a subcommittee to report, in the form of an appendix, a scheme for the enrichment and vitalization of the work of the rural schools by means of subjects drawn from rural life and surroundings. We do not deem it our province to discuss the theory of the rural school programme, much less the broader problems of the country school. It may, however, conduce to a better appreciation of what we suggest if we frankly state at the outset the assumptions on which we have proceeded.

We take it for granted that the work of every school, rural or otherwise, should embrace subjects drawn from its environment and from the life of its pupils. We assume that it should do this —

Because children should be taught to gather culture, knowledge, and inspiration from everything with which they come in contact;

Because children should acquire the habit of bringing to bear their knowledge and their mental powers upon every subject of thought that falls within their experience;

Because the study of the environment is especially effective in discipline and inspiration, since it is tangible, vivid, and impressive, and awakens strong and clear concepts, and produces deep and lasting educational effects;

Because mental acquisitions thus associated with the environment will be constantly revived by recurrent contact with it, and will thus be refreshed and kept alive and effective;

Because the basis for a successful study of the unseen and the intangible is best laid in clear and strong impressions of things seen and realized;

Because the school work is thereby made directly serviceable to the work of life, the value of immediate and practical utility being added to the superior disciplinary and inspirational values;

Because it puts life and soul into the work;

Because it serves as a bond of sympathy between the out-of-school life and the in-school life;

Because, in time (perhaps not at once, while inherited prejudices last), it will become a bond of sympathy between the patrons of the school and the work of the school.

We assume that a rural school, to be a true *rural* school, must take tone and color from rural surroundings, and must contribute directly to the enrichment and inspiration of rural life. We believe that this will aid in giving meaning and attractiveness to life in the country.

The following suggestions are offered in the hope that they may be helpful to teachers in making use of rural surroundings to enrich the work of country schools and to give vividness to the various formal studies. Our space being severely limited, it has seemed best to develop a few topics with some little fullness and let these suggest the treatment which others may receive. Those which we have been forced to neglect are quite as important and as rich in good material as the ones more favored. All are treated too scantily. What is really needed is a series of primers or a manual carefully worked out, embracing information as well as suggestions. But perfected tools come only with a perfected trade. The pioneer work must be done with poor implements. The progress of the work will bring better facilities.

We shall certainly be met with the criticism that the suggested work is impracticable, *that the teachers cannot* carry it out. This is far too true, but not wholly true. A success

here and there will be a center of education, and from such beginnings, even though they may be small and scattered, the good work may grow. It must start somewhere and somehow, or must have many little starts in many places and in many forms. This little appendix does not hope to be anything but a passing contribution to an evolution that must be long and doubtless slow. The gravest difficulty lies in the defective education of our teachers. To remove this we would urge every normal school to give elaborate courses in the lines here suggested, and to recognize in other ways that the rural school furnishes a distinct problem that must be solved in its own way. It may be that the establishment of rural normal schools is the mode of solution. We would urge agricultural colleges to give short courses on rural science for the special benefit of country teachers, and to educate the people, through their institutes and by other means, to appreciate and to require the adaptation of the rural schools to rural needs. We would urge upon the agricultural colleges the adaptation and publication of matter on rural science and rural economy suitable for educational uses.

We begin our suggestions with the surface features, partly because a study of them is a natural foundation for that of the remaining environment, and partly because it is directly tributary to one of the leading formal studies.

I. STUDIES UPON THE SURROUNDING LANDSCAPE.

These should be found helpful (1) as a foundation for geography; (2) as a basis for imagining the aspects of other regions which must be studied through maps, descriptions, etc.; (3) as good material for oral and written descriptions, and hence as a basis for language work; (4) as a means for the culture of the sense of the beautiful, thus furnishing a rational basis for modeling, painting, and drawing; (5) as a mode of teaching the significance of things usually regarded as meaningless; (6) as an unconscious introduction to geological processes, and (7) as an aid to understanding many matters of agricultural interest.

1. *Surface Features, their Nature, Origin, and Meaning.*— Let there be a general study of the landscape of the neighborhood and a series of talks upon it for the purpose of gaining a true conception of what a landscape really is, and of laying the ground-work for comparisons with other parts of the face of the earth. The children should gain a vivid and definite idea of the nature of their own landscape as a type; if it be plain, whether it be very plain or but partially so; if undulatory, whether it be gently or strongly undulatory; if hilly, whether gently or roughly hilly; if mountainous, whether of the rounded, the rugged, or the grand type.

From the general survey of the landscape descend to its larger elements.

Note and plot[1] the hills and valleys of the neighborhood, first taking up those near and then reaching out farther and farther, so that there shall be a gradual passage from those that are familiar to those that are only occasionally or distantly seen. From these it will be a relatively easy step to those which must be wholly imagined. Thus the child is led out easily and naturally from his own environment to the general geography of the earth. In carrying this out, walks and occasionally more considerable excursions will introduce the idea of travel and of the methods by which geography is made, and, if verbal and written descriptions, sketches and maps are required, the children are started right in their geographical work by being made young geographers themselves in a limited

[1] It will be understood throughout that the work indicated should be done as largely as practicable and advisable by the children themselves, but the teacher will do well at times to lead them by example as well as instruction. The special mode of carrying out these suggestions must be left to the discretion and resources of the teacher. Our effort is only to point out certain main lines which, of course, need not be followed closely. The teacher will often find a different way preferable for himself, and will always find much to be filled in, and perhaps more or less to be left out as not adapted to the particular school or to its *surroundings*.

eeing and learning thus just what geography is, experiencing for themselves just graphy is constructed, they can use their text-books intelligently and appre

n the general features descend to particulars. Note the way hills and valleys are each other. Are the valleys put in among the hills in any regular order or not?' as it may seem prudent raise the question of the origin of the hills and valleys, ot be too hasty about answering it. Let the children gradually work it out. hills built up, or were the valleys cut out? Let them ponder upon this question they do not find the answer to it in the hills and valleys themselves. In lead- this question, direct the children's observation to what is actually taking place. lleys being built up, or are they being cut down? What is happening in the val- hat is happening on the roadside? Suggest to them to observe the gullies and t the new gullies with the old gullies. How do the new gullies pass into the s? What is the difference in form between the new and the old? Which are the valleys? Lead them on thus to see how a trench may be gradually widened led into a valley. Lead them to observe how tributary gullies arise along the he principal ones, and how they grow by widening themselves and by eating ither side. Lead them to see that, if such creeping backwards and such round- e slopes were extended long enough, they would result in little valleys sep- ridges. Lead them on to note how the tributary valleys by eating back may cut through the top of the ridge and divide it into hills, and by deepening the hills more and more; and so on, step by step, until the children acquire a conception of how valleys with intervening ridges, and, at length, intervening hills, d. From this miniature mode of forming a landscape it is an easy step to the nsion of the way in which the larger valleys and larger hills, that make up the around them, were produced. When this conception is fully acquired, a firm been reached for understanding the formation of landscapes generally. And not but the landscape comes to have a meaning where before it was quite meaning- it is the significance of the things by which we are surrounded that gives soul tual life.

s:

nerican Geographical Series.
e Report of the Committee of Ten.
vis on "Geography in the University," *Journal of Geology.*
e Journal of School Geography.
e *Appendix I.* for list of books.

he Study of Streams.—Lead the children to observe just how streams flow, how t plunges into one bank and then is turned about and plunges into the other w it cuts back the bank where it strikes it; how it digs down into the bottom in aces; how it heaps up material in other places, etc. As they observe, lead them upon what they see and apply it to the study of maps. They will readily come to d how the bends are made longer and why a stream meanders. They will thus be

he region of the glacial drift there is often no regular relation between the hills ys, but in other regions the hills are generally (not always) simply that part of e that has not been carried away in the wearing out of the valleys, and this idea alleys are worn out by the wash of the land is the one to be implanted in the minds, as it is the germ idea of the formation of most rolling surfaces. In some ions the valleys have not been worn out enough to form hills, and we have only a n trenches cut into it. In such cases it will be very easy to show the children how have been formed by the streams and by the land wash. In the glacial regions d valleys may be quite irregular, and it may not always be easy to explain them, eacher is exceptionally well informed on the subject.

led to see the meaning of the tortuous courses of streams. Induce the children also to note the work of temporary streams (*e. g.*, after showers) along the roadsides, in the valleys, and on the slopes of the fields. Have them notice the wash from the surface of the land, and thus lead on to the work of water transportation. Lead them to note that this matter lodges elsewhere, and thus approach to the work of deposit. By seeing when and how this wash lodges they will understand the modes of deposition; the formation of deltas, and the building of bars and spits in the streams, the formation of "bottoms," etc.

To approach the origin and maintenance of streams, direct the children to observe what takes place after a rain; if light or slow, that all water goes into the ground; if heavy and rapid, that some goes into the ground, but much runs away. The latter makes surface streams, but they don't last. Follow the water that goes into the ground. Direct attention to underground water as shown by wells, and connect this with the rain that soaks into the ground. Have the children bring together the depths of the wells at their different homes. Raise the question whether the wells go down as low as the nearest streams. (It will be found almost invariably that the water in the wells is higher than in the adjacent streams, except in occasional flood stages.) Then draw out the general principle that the underground water is higher than the streams, being only the rain water on its slow way through the ground to the streams, and that it is this water which works out to the surface in the low valleys and keeps up the supply of the living streams. The dry valleys lie above this underground water, and hence they are not constantly filled. Water only runs in them after showers. The wet valleys lie below the surface of the underground water, and hence it seeps out or comes forth in springs. The children will easily understand how the seeping out makes bottom lands wet and marshy.[1] The principles here brought out will be helpful later in settling questions of water supply, drainage, etc.

3. *The Study of Soils.*— Incite the children to carefully examine the soil to see how it is made up. Have them wash some of it so as to separate the fine material from the coarse. Direct attention to the natural assorting done by water in the gullies, on the slopes, and in the valleys, and how, on the other hand, fine mud is laid down in the "bottoms" and elsewhere, and thus lead them to see how soils become coarser or finer according to conditions. In most places it will be easy to find pieces or beds of rock partly decayed, and to show that this rotted rock is much the same as soil. From this they may be led on to understand that soil is usually but decayed rock. This will be easily accomplished in regions where the rock lies but little below the soil and the latter graduates down into decaying rock, showing the stages of the process. Induce them to note how the leaves, grass, etc., decay and turn black, and thus lead them on to see that the dark part of the soil comes chiefly from the decay of vegetation. Induce the children to observe the different qualities of soils in different situations; the soils in the valleys, on the slopes, and on the hilltops, and lead them to see how the wash of the surface affects the soil; also how the vegetation affects the soil; and how the soil affects the vegetation. Teach them to notice the difference between wet soils and dry soils; the swelling and softness when wet, the shrinking and the hardness when dry; also the swelling when frozen and the softness on thawing; the effects of the ants, worms, and burrowing animals in bringing bottom soil to the top, letting in air, etc.; likewise the effects of the roots of plants in opening up little tubules, which are often left open when the roots decay, and so lead on to the idea of porosity and of the penetration of the soil by air. With the older students the fact that the air goes into the ground when the barometric pressure is great, and comes out when the barometric pressure is light, the "breathing of the soil," may be taught, and its importance urged. Teach the children to observe the difference in the dryness of culti-

[1] Much marshy land is, however, due to the catching of the surface waters in basins that *have no sufficient outlet.*

vated and uncultivated soil, of hard soil and mellow soil; and so lead on to the utility of the culture in permitting air and moisture to go in, etc.

Starting again with decay of rocks, lead the children to see that some parts of the rocks do not decay readily, and hence bits are left, and that these are washed about and form grains of sand or pebbles. Let them observe these and see that some are well-rounded and some are angular, according to the amount of wear, and thus the origin and meaning of sand or pebbles will become evident. The rolling action of brooks and rivers and of lake and seashores will be manifest. With a thermometer interesting experiments on the temperature of soils when wet and dry, when hard and when mellow, when stirred and unstirred, etc., can be made.

References:

"The Soil," by F. H. King. The Macmillan Co.
"Rock-Weathering and Soils," by George Merrill. The Macmillan Co.
"The Formation of Vegetable Mold," by Charles Darwin.
See also *Appendix L.*

II. APPLICATIONS OF LANDSCAPE STUDIES.

The study of the features of the landscape may be followed by a study of their influence on human affairs, and on the distribution of plants and animals. The following are some of the lines along which this may be carried out:

1. *The Location of Homes.*— Relative merits of different situations, such as summits, slopes, valleys, etc.; of different exposures, as southerly, northerly, etc.; of different relations to woods, openings, outlooks, etc.; of relations to springs, streams, and other bodies of water; of access to highways or to the several parts of the farm, and the bearing of the surface features on such communications. Do the sites of the later dwellings differ from the earlier? Are there discernible reasons for change? What determined the selection of the material of the first generation of houses? Does the material change with successive generations, and, if so, why?

2. *The Location of Roads.*— How far are they influenced by surface features? How far by other considerations? Distinguish wise and unwise locations. What is the effect of wash, drainage, etc.? What changes of location or of method of maintenance may be recommended?

3. *The Location of Adjacent Towns and Villages.*— Study the reasons for their particular situations. What bearing had natural means of transportation, roadway crossings, river fords or bridges, special agricultural or mineral resources, mill sites and like features upon their location? Do the dates of their founding, the rates of their growth and other features of their history show wisdom or unwisdom in their location? Note the bearings of their location on the interests of the surrounding country.

4. *Development of the Region as Affected by its Environment.*— Study the nature of adjacent manufactories and the reason for their location. What class was first developed, what later, what changes have taken place? Has there been increase or decline, and what is its meaning? What is their importance and the value of their products? How do they affect the rural interests? What sources of power are used and what remain still unused? Note the favorable and unfavorable features in the physical conformation; the presence of mines, quarries, the facilities for transportation by roadways, streams, canals, railways, etc., and their bearing upon the development of the region.

5. *Social and Civil Life of the People as Affected by Surrounding Physical Features.*— Are the physical surroundings favorable to social gatherings and social life? Do the surface features lead to sparseness of dwellings, roundabout and difficult roads, or the opposite? Do they make the earning of a living easy and give time for social intercourse, for education, etc.? How do they affect the character of the people, etc.?

6. *The Distribution of Vegetation as Influenced by Surface Features.*— Sketch the timbered, prairie, marsh, and "bottom" areas. Note the effects of slopes, drainage, soils, etc., upon these. How do the physical conditions affect the roots, stems, leaves, and general forms of plants? Note the adaptation of different areas to different crops; also the adaptation of the region to different kinds of industry, *e. g.*, grazing, grain raising, etc. Note the changes in vegetation and compare the original with the present vegetation. Discuss the removal of forests. Where was timber first removed, and what timber? Where is it now reserved and why? Note the earlier and the later uses of timber supply, and the variation of prices and of uses of timber.

III. THE STUDY OF ATMOSPHERIC PHENOMENA.

In a manner analogous to the foregoing all the features of the air and sky *within the observation of the children* may be treated with interest and profit; the air itself, the winds, the clouds, rain, snow, hail, thunder, lightning, heat, cold, dew, evaporation, etc. The keynote should be observation, followed by inquiry, reading, reasoning, forecast, etc. The systematic prediction of tomorrow's weather at the close of each day will greatly stimulate acute observation of delicate features of cloud, wind, etc., and will build up that judgment of weather which is so important to the farmer.

It is urged that teachers secure from the nearest weather bureau station copies of the daily weather maps, and copies of the monthly summaries of the weather and crop conditions of the United States. A careful study of these maps and summaries, *supplementing the pupils' own daily observations*, will form a good basis for other geographic study. The data furnished by the Weather Bureau are particularly valuable for several reasons: (1) They are collected by trained observers; (2) the stations are so distributed as to fairly represent the whole country; (3) observations are uniformly and regularly made every day at all stations; (4) the various meteorological conditions are automatically recorded by instruments of precision, insuring great accuracy of detail; (5) the various data are appropriately represented daily upon one map which, thus, day by day presents a clear picture of the climatic and crop conditions of the whole country.

By these means the pupils will be much interested in working out the relative amounts of rainfall, cloudiness, and sunshine; also the average and the extremes of temperature found in the areas and belts devoted to the great crops, as wheat, corn, oats, tobacco, cotton, and sugar cane. The relative amounts of rain, cloudiness, and sunshine for the seasons may be readily determined. The incidents of the season in the localities where the pupils live frequently afford excellent opportunity for forming a picture of other localities far removed from their own. Thus a study of the character of the rain and the clouds in winter gives a basis for picturing arctic regions, and the same study in summer an equally sound basis for picturing tropical regions. For example, in June, 1892, there was a fall of nearly eleven inches of rain at Chicago; with the summer temperature, an almost tropical verdure was the result. In September and October in Chicago, in 1891, the rainfall was about two-thirds of an inch; this closely approximated the average precipitation in Arizona, and, when considered in connection with the unusually high temperature of the year, it became an easy matter for the pupils to picture desert conditions and modes of desert formation. By similar means the study is capable of almost indefinite expansion.

IV. THE STUDY OF PLANT LIFE.

In like manner, the plants of the region may be treated. The purpose here, as before, is not so much to learn *about* plants as to come into *actual intellectual contact* with them by observation, interest, sympathy, and appreciation. Not only should the plants be observed in all their parts and functions, but their history, mode of propagation, preferences for *soil, topographic situations*, exposures, etc., should be studied. The association *of plants with one another*—"plant societies"—are especially interesting and profitab

native plants should be included, and the
lecting or warring against others afford large
essentially plant culture, the vital relations of
the right lines. The old-fashioned botany, the
"Analytical Key," is not at all the thing here
life, habits, functions, associations, and services

at we have in mind, the following is offered as
model. There are many ways of reaching like

everal seeds (beans, for example) in the hands of
of their surfaces, as a first step. Write upon the
1) stem scar (hilum), (2) small dot on one side of
lize the seed (micropyle), (3) ridge on side of hilum
one end of bean has different slope from the other,
gitudinally around the seed, etc. Request pupils to
e how many of the observed points are common to
use of words in oral expression require the pupils to
erved. As a training in written language require
n seen. This will react to *intensify* the seeing.
lement, let a pint cup, or a straight-sided bottle, or a
ns, and mark the surface of the beans with a string or
with water and put in a warm place for twenty-four
he first stages of change, and charge him to be able to
were. On the next day measure the amount of change
change? If the water put in was first accurately meas-
ry school should have means of measuring and weigh-
measure it. Compute the difference. Compare the loss
the beans. What has become of the water? By what
Here are the first steps of growth.
among the pupils, and let them again look for the points
e any disappeared? Have others appeared? Have any
e skin be removed. What features previously noted are
see an explanation of any features noted on the outside?
ves (cotyledons), the radicle, and the now very evident first
mpkin seed, and corn in the same manner.
yers of thick cloth to the inside of a round pie tin. Wet
e between them some of the seeds which have been studied,
ther to prevent evaporation (which introduced a slight error
lace these in a warm place to germinate, noting the tem-
pupil to repeat the experiment in a place where the tempera-
recording the temperature from time to time. Urge another
cloths wrung out very dry. Compare results to find out the
re. Try different seeds to see what differences of conditions
pital experiments which fix the foundation principles of mois-
ant growth.
e sufficiently advanced, urge the boys and girls to request per-
atory power of the seeds which their parents expect to plant in
udy is best done from February to April.) Place 100 seeds of a
ditions described, and note how many sprout in three, four,
should be tested before planting, and this is practical work

which, if rightly done, will be appreciated by parents as being immediat
as instructive and disciplinary.

2. *Growth from Buds.*—When vegetation begins to start in the sprin
sion at noon or after school to gather specimens of large buds. Clip sp
of Cat'lead, cottonwood, or hickory, set them in water and study in the ma
and so reach the fundamental idea that the bud and the seed are in natu
Pick off the scales one by one until the leaves are reached, inquiring w
for = what the cotton; what the varnish. Count the number of true le
a little later to the trees again and see how many leaves the shoots from
have ye. Are they the same in number as in the buds? Or have new one
were these buds formed? Why were they formed the year before?
ponder over these questions.

Study the arrangement of buds and of leaves on the stems. I
to discover the law that buds and leaves are placed as far apart on the
and in a symmetrical order. Lead them to discover that this order
where there is the least shading, where the movements of sap up a
leaves and branches quite equally, so that the stem will be equall
sick ees. Let them learn to distinguish fruit buds from leaf buds. Have
gardens and orchards to see if there is an abundance of fruit buds. T
tinguish between live and dead buds, particularly in regard to fruit tree
be done with a definite educational purpose, in which the utility of th
also a clear recognition.

References:

"Principles of Plant Culture," Professor C. S. Goff. Published by
son, Wis.
"Flowers in Relation to Insects." The Macmillan Co.
Gray's Botany.
Bessey's Botany.
See also list in *Appendix L.*

V. THE STUDY OF ANIMAL LIFE.

Along essentially the same lines the animal life may be treated.
important factor enters, conscious life, and this affords a most fruitful f
the sympathies and moral sentiments of the children. Nothing so co
and vital (not merely sentimental) sympathy with living things other th
careful study of their lives and habits. The child comes to see the w
and to appreciate and sympathize with them in their efforts to work o
their lives. And even if these purposes strike across human intere
will not be entirely absent, and cruelty will grow more and more ra
education progresses. The education of the sympathies finds little sp
school programme, and hence the special value of utilizing the opportu
There are several other topics which may be treated in like mann
in its application to land measurements, etc., various phases of econo
rural affairs, the social and civic aspect of country life, etc.
We respectfully submit the foregoing suggestions, fully conscious o
in the hope that some little helpfulness may be found in them.

T. C.
W. S.
F. H.

A COURSE OF STUDY FOR RURAL SCHOOLS.

A course of study for country school children should be framed with direct reference to the actual conditions that prevail in country life and, in large measure, determine it. Among the most important points to be kept in mind are the following:

1. *There is a general lack of appreciation of the immediate surroundings.*

This is not peculiar to country people; it is simply a fact in the country, as it is in the city. Education can confer no greater boon than that of showing how the real pleasures of life may be derived from one's own immediate surroundings, and from the work he is called upon to perform.

2. *There is an almost total lack of scientific skill in farm work.*

The prejudice against farm machinery has been extremely strong. Farmers have been forced into using it because other vocations have drawn away the help that formerly was depended upon for hand labor. The treatment of the soil is, in the extreme, unscientific. The American farmer, in this respect, is scarcely ahead of the Chinese; his unscientific methods have made him the target of every caricaturist. In this, and in a score of other ways, the farmer pays the penalty of his ignorance.

3. *In the country there is great dearth of social life.*

This, more than hard work, deprives the country of its strength. Bad roads are largely responsible for the present social condition. In many places farmers, and especially the wives and daughters, live in dreary isolation for more than half the year, because no means of travel yet invented will master the mud of country roads. To properly recognize the foregoing conditions, therefore, it would seem that a course of study should contemplate three lines of interest:

1. *In the earlier years, especially, great attention should be given to the picturesqueness and natural beauty of the surroundings.*

Without trained and careful effort in this direction, the intensely practical character of their contact with the various things about them will close the eyes of the children to many beautiful things that should be a source of joy and pleasure throughout life. Much out-door study should, therefore, be encouraged. The children should be familiar with every brook, and waterfall; with every cliff, wooded copse, and ravine. The hills, cloud-capped, basking in sunshine or glistening with snow, should be permitted to work their silent influences into the children's lives. The country pupils are not naturally insensible towards these scenes; but the usual tendency of school life is to belittle and destroy all kinship that the children may originally feel for the beautiful. As an adjunct in this phase of study, drawing, painting, and modeling should hold at least equal place with reading, in these early years.

2. *To supply the demand for scientific skill a good deal of attention should be given to—*

(1) *Mechanics.*— Pupils should be taught enough of practical mechanics to enable them to ward off the legion of fakirs that beset the farmer with their labor-saving (?) devices.

(2) *Manual Training.*—Scarcely a day in a farmer's life passes when there is not some demand made for skilled hand work with tools. The "stitch in time" on the farm is frequently fatally delayed when it involves a trip to a neighboring mechanic.

(3) *Mathematics.*— The farmer suffers more loss today from his ignorance in this subject than any other. Bookkeeping, as applied to farm accounts, should be carefully taught. Taking the amount of money at stake on the farm into account, no other business in the world tries to get along with so little bookkeeping. As a natural result, there is infinite waste in a hundred ways that are unnoticed. The time has come when the farmer must learn the lesson that the merchant already knows, that, if he is to gather a competence, or even earn a livelihood, it must be done by a careful saving of small margins of profits

upon all the things with which he may work, instead of by large gains upon a few things. Few farmers, simply because no accounts are kept, realize that badly stacked hay and grain, poorly fed stock and illy cultivated fields result in actual cash loss, just as surely as though the money were spent at the gaming table. The arithmetic of the farm account would be of incalculable value to the farm boy if he learned nothing else. The study of form and elementary geometry should be made very prominent. Every farm boy should be taught the elements of trigonometry and surveying. He should know how to "run a line," and how to lay off fields so that the same may be worked to the greatest advantage. He should be taught how to lay out roadways at proper grade, and how to make them. Nothing would hasten the era of good roads more than to show the farmer how much loss in actual cash may be charged to bad ones, through loss in harness, vehicles, horseshoes, horses, and time.

(4) *Biology.*— To show the splendid opportunity before every farmer of intelligence for study in this field, it is only necessary to cite the fact that it was by a close study of domesticated animals and plants that Darwin was able to probe the mysteries of life more profoundly than any before him. It is by no means necessary that the farm boy should study the sunshine only to find its value in pounds of beef; by the nature of the case he is, if intelligent, brought into closer touch with the great problems of life and energy than any other being. It would broaden, not diminish, the scope of this interest if from boyhood he were to learn everything possible about the care and scientific feeding of animals; if he were to learn exactly, for example, how to feed for beefsteak, and how to feed for butter, with the greatest economy. The study of plants would furnish an interesting analogy. The selection of seed; the cultivation of crops with due reference to roots and top; planting, care, and grafting of fruits; the relative value of forage, grain, and other crops, and many similar topics, are subjects for exhaustless study, every hour devoted to which would bring actual cash returns, and at the same time furnish a broad basis for an understanding of the plant world.

(5) *Meteorology and Physics of the Atmosphere.*— By a careful study of the maps and other materials supplied by the United States Weather Bureau, every farm boy should learn something of the nature of the great storms that are likely to visit his region. A careful study of the weather maps, supplemented by good collateral reading, would leave very little to be desired in his geography.

(6) *Mineralogy.*— The composition, the origin, and the treatment of soils, how their productiveness may be renewed and conserved. The relation of the soil to the underlying rock. The origin and relative value of the native rock. The geological history of the country.

(7) *Chemistry.*— A practical knowledge of the principal elements which enter into the soils, plants, and animals. The chemistry of foods.

These subjects should be presented not only from the economic, but also from the more strictly scientific or philosophic side. Because "Man shall not live by bread alone," he has always despised the science of bread for bread's sake. Country children, as well as all others, must be allowed to have an insight into the deeper and more general problems of creation if they are to be satisfied with their work. An intelligent study of nature from the economic standpoint inevitably involves a study from the scientific side also.

It would be a service of inestimable value to the rural schools, and, for that matter, to schools everywhere, if the many government publications bearing upon the studies of nature could be placed in libraries easily accessible to teachers and pupils. The best of these should be in every schoolhouse as books of reference. These works are worth a great deal more than many of the text-books that are far more pretentious.

3. If the country is ever to acquire that refinement which the human being feels it is *his right to possess, it must* grow it. There are those who believe that, sometime, it

great tide of youth that is now pouring in upon our cities will turn back upon itself, and thus carry to the country the culture that the soil could not of itself produce. It is not to be. Those who are once engulfed in the vortex of the city never go back; and if their children or children's children are by some chance cast out upon the country, they must begin life afresh, as did the primeval man.

Certain physical conditions that now prevail in the country must be improved, or social progress will be forever stayed. The chief of these obstructive conditions is the unspeakable system of roadmaking. Good roads, with their natural *sequelæ*, would practically solve the problem of country life. They would mean hours of social intercourse instead of hours of dreary, monotonous solitude. They would mean free delivery of goods from the stores in towns. They would mean free and daily delivery of mail. Better have three- or even four-cent postage, if necessary, with free delivery every day, than one-cent postage and the "catch-as-catch-can" delivery of the present time. Good roads would mean the rapid extension of the trolley-car system, which would reduce to the minimum the labor of exchange of commodities between one locality and another, and between country and town. As in the city the attention of children is being directed more and more to municipal affairs, so in the country let the children study practically all these conditions, which lie at the foundation of their physical, intellectual, and moral welfare.

Whatever else the course of study may do, let it breathe hope for the country boys and girls; not the hope of a life that, to be realized, must be lived in the city, but let it rouse the anticipations of a life that has its background in the sunsets, the hills, the woods, the orchards, and the waving grain fields of the country. A genuine life, intelligently lived, alone can bring culture. Whether the instrument of living is the plow or the pen, it matters but little; the furrow well turned, and the line well written, are both fundamental and absolutely uninterchangeable in human society.

Country life, not less than that in the city, may have its aspirations that are truly noble. The schools must not confuse or destroy these by trying to "citify" the country or by seeking to "countrify" the town.

The city and the country express the equation of life; a weakness in one member means the ruin of both. Each must supplement, but not destroy, the other, and both must be preserved.

WILBUR S. JACKMAN.

Chicago Normal School.

APPENDIX H.

THE FARM AS THE CENTER OF INTEREST.

Nowhere on earth has a child such advantages for elementary education as upon a good farm, where he is trained to love work and to put his brains into work. The best-taught school in a densely populated city can never equal in educative value the life upon a good farm, intelligently managed.

The child on the farm is made responsible for something, for some work, for some care-taking, and out of this responsibility grow trustworthiness, habits of work, and a feeling of personal power in all the essential elements of character, with the exception of those much-needed phases that spring from personal contact with society outside of home.

The surroundings of the child upon the farm in contrast with the complexity of city surroundings are comparatively simple; the same forms, colors, sounds are repeated in endless succession, presenting innumerable variations and at the same time complete harmony and unity. The trees, the shrubs, the foliage, the flowers, the fields, the hills, val-

leys, plains, and brooks create distinct, everlasting images in the child's mind; images impressed, concentrated, and expanded by countless sensations, by countless contrasts, that stream in through every avenue of the soul.

Then, too, everything appeals to the child as useful or non-useful. Farm work means the necessities of life, the comforts of home, the possibilities of an education. The reaction of the child upon his environment is the main thing, however; his power to conquer nature with his own hands and mind, together with continual lessons which bring home to him the inevitable action of and his dependence upon the laws of nature, as they assist, or as they baffle, his efforts.

The child enters school with senses keen, character in full tide of formation, and the impulse to act fully organized. He has, besides, acquired a comprehensive knowledge of his environment. This instinctive, spontaneous growth should go on and have full opportunities for complete development.

The statement of what a farm does for a boy in its general lines may easily be taken from the experience of a farm boy in New England, for instance. It is possible for me to give the story of such a one from actual experience — what he learned, what he studied, and what he acquired.

The scene is upon a rocky farm in New Hampshire; the boy an ordinary child, such as you may meet anywhere in this world of ours. As soon as he found himself upon the farm, at eight years of age, he began to study — to study in the best sense of that much-abused word. He began the study of geography — real geography. He observed with ever-increasing interest the hills, valleys, springs, swamps, and brooks upon the old farm. The topography of the land was clear and distinct; its divisions into fields, pastures, and forests were to him the commonest facts of experience. The image of the whole farm and all that it contained is one of the clearest and most distinct memories in his mind today.

The boy not only studied geography, but the foundations of geography, geology, and mineralogy. He knew in an elementary way the nature of the soils; why one field was better than another for a certain crop, and began to reason upon cause — sunshine, drainage, drought, and fertilization.

He studied botany. All the kinds of grasses he knew — timothy, clover, red top, silver grass, pigeon grass; how they were sown, how they came up, grew, were cut, cured, and fed to the cattle; what kind of hay was best for sheep, and what for oxen. He knew the different weeds, too — the rag weed, smart weed, pig weed; he had a practical knowledge of these from close contact, with the hoe and his bare hands. This knowledge of plants took in medicinal herbs — caraway, camomile, catnip, docks, worts, and mints, lobelia, pennyroyal, and g get. These practical lessons in herbs were doubly impressed, sometimes in a painful way, although they were intended to relieve pain.

The flowers that grew on the farm and surrounding farms, wild and cultivated, hollyhocks and lilacs in the garden, the golden-rod and violets of the pasture, and the sweetest flower that ever blossoms, lifting its delicate petals close by the snow banks in the early spring, the harbinger of the resurrection — the trailing arbutus, taught him lessons of beauty, trained his eye for color, deepened his reverence for God.

He knew the trees — the maple with its sweet burden of spring, the hemlock, and the straight pine which he used to climb for crows' nests. He noted the difference in woods, and their value. As soon as he could wield an axe he cut the trees for lumber, fences, and firewood. With all the shrubs he was acquainted; in fact, he got an elementary but very useful classification that has made the subject an interesting one throughout his life, and prepared him to appreciate the practical value of botany in the schools.

He studied zoölogy, too. The animal life of the farm was very close to him. The brutes were his early companions. The domesticated animals he knew — the frisking lambs, the knowing and antagonistic buck, the tricky mare. He helped to break steers, to kill hogs, to hunt for eggs, to feed the chickens. He knew the wild animals, the squirrels, the rabbits, the woodchucks; the insects, the grasshoppers, and ants; bugs that scurried away when he lifted a stone.

With the birds he was intimately acquainted — the wrens that built their nests in the barn and sheds, the robin redbreast, the shrieking blue-jay, the tiny warblers in the woods, the wise crow, and the timid partridge that would give her life in defense of her young.

He had a practical knowledge of meteorology. He could tell the time of noon upon the instant, by two infallible monitors, his stomach and his shadow. He could foretell storms with nearly as much wisdom as is exercised by the Weather Bureau. The coming of a shower was known to him — the hurry-scurry to get the hay into the barn. The long, steady breezes from the east brought on the storm, and a storm was a welcome thing to a boy on a New England farm! It meant a day of perfect delight on the dear old river. The ostensible purpose of the boy was to catch a few small fish — the real purpose, worship, alone by the rushing floods, the quiet pools, the pebbly beaches, and the silent woods.

In fact, every subject now known in the curriculum of the university this boy studied in an elementary way. He was really grounded in these studies. He observed, investigated, and drew inferences, perfectly unconscious, to be sure, of what he was learning, or how he was learning; but still, he learned, and he studied, and the best lesson of all was his personal reaction upon his environment. His plowing, hoeing, haying, digging, chopping, lumbering, his mending of sleds, and making of cider, sugar, lye, and soap were all so many practical lessons in life which exercised his body, stimulated his mind, and strengthened and developed his purpose in life.

He lived to become a school-teacher, and taught school earnestly and bunglingly for twenty years before he had even a suspicion of the value of his farm life and farm work.

How the work of the children upon the farm is to be brought into the school, concentrated and expanded; how this great, spontaneous, ever-increasing interest is to be made use of; how this organized energy is to be turned into the main life current, are questions of questions. It is the imperative duty of parents and teachers to determine how the farm life of the boy and the girl may be recognized by use in the schoolroom. Which of all the studies the boy has begun should be discontinued? Are they not all essential? Must they be held in abeyance until he reaches the door of a high school or a college? That the child begins them spontaneously and instinctively is argument enough for their continuance.

Without attempting a course of study, I may be allowed to make some suggestions. In these suggestions I present only the common and common-sense things needed in farm work and farm life, and endeavor to show why they form the substantial basis of all study.

GEOGRAPHY, GEOLOGY, MINERALOGY.

The child's knowledge of geography may be made the basis of all his further study of that subject. He brings into school geographical images of the farm and the surrounding landscape. He is tolerably well acquainted with the topography of his district and, it may be, of the town. First, find out how much the pupils really know of these subjects. Get them to describe the farm or any part of it. How many fields are there? Where are the pastures? The woods? What are you raising in each field? How many cattle have you? Describe them. Tell about the sheep, the horses, the hens. Get pupils to sketch the farm on the blackboard, paper, or slates.

A pile of sand in the yard might be used for modeling the farm, showing hills a valleys, plains and brook basins. In winter rough boards with raised edges might used for sand modeling. Later, chalk modeling should be used to indicate the rel of the land.

The beginning of political geography by the divisions of the farm into fields a pastures may be made. The lay of the land, the relative positions of these, form go lessons in the points of the compass. Pupils would compare one farm with anoth so that in time they could model and draw the whole district, including the roads.

If there is a stream in the neighborhood, it may be used as a study of the brook bas the wearing of water — a good introduction for geology. The examination of the s after rains, especially loosened soil, may be studied to show the effect of storms in e sion. The dip and formation of the surface, division into hills or plains, bottom lan and bluffs, may be related to the working of the stream.

The study of mineralogy may begin with the study of soils, the kind of soils, a the forms of the grains. Specimens of gravel, sand, loam, vegetable mold, clay, and ro should be brought by pupils to school and studied. How is vegetable mold forme What in the soil is useful for plant life? How does the soil change through vegetati and under cultivation, and also under the action of heat, water, frost? It is easily se that all these are elementary studies in weathering — dynamical geology.

If there are rocks on the farm, they may be studied; the archaic rocks, the secor ary rocks, the strata, and the dip of the rocks — all so many points of introduction geology. Boys on the farm will know something of the mineral on different parts the farm, in different fields. In general the bottom land is the richest, and the questi might easily be asked, Why? In this relation uses of the different kinds of soil m be studied. Questions of why one crop will grow in one portion of the farm, a not in another, and why crops should change or rotate from year to year, should all brought in.

Housekeeping, butter and cheese-making, cooking, gardening, and affairs pertaini to home economy should be taken into the school. Draw and describe your garde Divide it into beds. Locate the flowers, the vegetables. Sketch your hens, the turke How do you make bread?

METEOROLOGY.

Elementary studies in distribution of heat would come through the changes of t seasons. The shadow stick may be used, showing the changes in the sun's position re tive to the earth. A sun dial on the schoolhouse should be made. The daily chang in the sunlight coming through the different windows may be measured through shado on the wall. It is a very easy matter to get the daily weather reports and examine the Every country school should have a thermometer, barometer, anemometer, and rain gaug to measure the force of heat, the weight of the air, the velocity of the wind, and t depth of the rainfall. Pupils should make weather reports day by day and compa them with the printed weather reports. The elementary study of air and its compositi should be made; its weight, direction, and velocity. The study of evaporation of wat followed by the forms of water in the air — fog, mist, and cloud, should be mac Pupils may be called upon to make daily prophesies of the weather, and give th reasons for the same. Every change of the atmosphere, shower, rain, hail, snow, or wi may be taken advantage of for this purpose.

The uses of water may be discussed, especially the uses of water for vegetable lif the drainage of the land, especially on farms where the land has to be tiled, or whe irrigation is necessary. Questions like these may be subjects of investigation: How f does the water go down into the earth? What stops it? The cause of a spring? *brook, creek, rivulet, or river?* The saturation of different kinds of soil and rock by wa

Depth of the wells and changes in the water level. Into this discussion would come the question of floods and flood plains, and of silt brought down by the water, how and where deposited, that is to say, if there is a creek or a river on or near the farm.

These are some of the innumerable points in regard to meteorology that impinge on the child from all sides, and lead to higher and more difficult questions and investigations.

PLANT LIFE.

I should place first in this study the crops upon the farm; the study of the corn; its history; its nature; different kinds of corn; the uses of corn. The same may be said of wheat, oats, rye, and barley. How land should be fertilized for different crops. Study of the food of plants, nutrition, etc. The grasses may be studied; different kinds of grasses brought into the schoolroom.

In the spring germination of seeds may be especially noted. Seeds should be planted in boxes in the schoolroom. It would be an excellent plan to have a half-acre garden near the school, in which the experiments could be performed, and in which the farmers of the district would take a deep interest. The garden could be made of value, and should include everything that is raised on the farm. There should be a preliminary study of plants, especially flowers, in regard to function. Little or no attempt, at first, should be made to close analysis, or to classification. The guide in the elementary study of all subjects should be function.

Forests; different kinds of trees on the farm; leaves, and bark of the trees; deciduous and non-deciduous trees; the uses of wood for heat, shelter, and household furniture.

ZOÖLOGY.

The study of domestic animals and their functions; cows, and different kinds of cows; milk, and how milk is changed to butter and cheese. The history, for instance, of butter and cheese-making, from the old-fashioned churn to the creamery. Study of horses, and sheep; use of wools; meat of different animals. Study of wild animals, birds. Get each pupil to make a list of all the birds he sees upon the farm during the year; when they come, how long they stay, when they depart. This would bring observations in regard to migration. Name the birds staying upon the farm all summer. Where do they build their nests? How do they raise their young? What do they eat? What birds are injurious to the farm? What birds are useful? The pupils could learn many a profitable lesson; would find that most of the old ideas about birds are totally wrong; that many, if not all, of the birds that have been counted mischievous are really helpful; that birds are needed on the farm to kill destructive insects; that the little damage which crows, for instance, bring about is comparatively nothing to the good they do; that the birds are really "nature's militia" to destroy the enemies that menace the life of vegetable, plant, and tree.

Another study is that of destructive insects; the wood-borers, the cankerworms, the weevil; a very practical study. Then there are the bees, wasps, butterflies, and their uses in efflorescence. The wonders of honey-making. The earthworms and the effect they have upon the soil. The boy will be sure not to leave out the woodchuck, the fox, the coon, or the muskrat. He may even learn that the unpleasant little skunk has a use and a place in the world.

PHYSICS AND CHEMISTRY.

Wherever forces are seen, felt, or handled, an inquiry into the nature of such forces is the study of physics. Meteorology is one of the great departments of physics. Distribution of sunshine, the working and nature of heat, the force and wearing of water, *measurements of air, of the wind*, are all close to the child, who needs only good teaching to *lead him to close and closer* investigation.

Practical uses of force suggest many problems: force of running water; running mills; force of wind is turning windmills; the economical application of force in farm machinery from the apple-parer to the reaper; the mystery of the lever revealed by wedge and crowbar; the turning of the grindstone; and the use of the jackscrew in raising buildings.

Chemical changes are taking place in earth, air, and water, and are continually applied in the household affairs. The teacher has an excellent opportunity to call attention to the chemistry of cooking; to yeast; to milk in its transmutation to butter and cheese; the making of lye and soap; the oxidation of metals. The composition and nature of different soils are a fruitful study; the effect of sunlight upon foliage in the production of leaf green; the transpiration of water through vegetable tissues, bearing nutrition from cell to cell. The burning of wood and its change into ashes.

The children upon a farm are called upon to apply daily the laws of chemistry and physics. It is the province of the teacher to lead them to apply these laws more and more intelligently, to the end that a deep interest is aroused and they are made earnest and everlasting students of these subjects.

MATHEMATICS.

There can be no work properly done upon the farm without measuring. Most of this measuring is done by what is called "rule of thumb," or so-called practical judgment. The farmer estimates weight of cattle, hogs, or sheep by sight. He can tell how much cord wood or timber a certain area of forest will produce. In fact, measuring in everything he does is absolutely essential. There is no better way for the teacher to study the processes of measuring, or arithmetic, than to inquire into the everyday demands of farm work, and no better way to teach arithmetic than to bring the measuring necessary for farm work into the schoolroom. The elementary work, and the work that ought to be continued throughout the course, should be largely estimation with eye and hand, of length, of distance, area, volume, bulk, force, and weight; the estimates to be verified by actual measurements. That which a farmer is called upon at every turn to do should be begun with the children. And here the parent can supplement the teacher at every step.

When developing the mode of judgment, the pupil should be trained to use the chain in measuring areas, the yard-stick in measuring cord wood, forceps in lumber, dry measure for grain, scales for weights, liquid measure for milk, vinegar, or molasses.

The outcome of all raising of crops is commercial value. There should be a system of farm bookkeeping, in which writing and arithmetic play a prominent part. Children could be easily trained to keep books for their parents, and the work of the farm be made to present all the problems and conditions for a complete mastery of all essentials in arithmetic.

READING AND LITERATURE.

The suggestions already given are for the elementary study of subjects. Interest in all these subjects will lead directly to a great desire to know more of the observations and investigations of others. Here reading and the study of text-books have their great place. The first steps in reading may be short stories of the farm, of the crops, of the animal and plant life, written in simple sentences upon the blackboard. The reading lessons should be closely related, and from beginning to end bear directly upon the subjects the child studies.

Nor is there wanting a great and extensive literature on geography, geology, mineralogy, and botany. Books like "The Soil," written by F. H. King, University of Wisconsin, and "The Great World's Farm," by Salina Gaye, would arouse an intense interest if the subjects here named were really used for the education of the child. Poetry may be *brought in at every step* — the poetry of the farm, the clouds, the air, the winds, the

flowers, the fields. The pupil will find that the poet and the artist have embalmed in deathless prose or poetry the commonest things of earth, air, and water by which he is surrounded. Thin, vapid, sensational, injurious reading would have no place in his life if all reading were carefully selected in the direction of his aroused, sustained, and educative interests.

The process of learning to read is a very simple one if the free, spontaneous action of the mind is not obstructed by abnormal methods. When the proper stage of development, which manifests itself in an intense desire to gain knowledge through the printed page is reached, the child will learn to read as easily as he has already learned to hear language. All reading should come close to the child, should enter into his personal experience; should be about something he feels the need of knowing—facts about his pets, about things he loves to do—words that re-image familiar scenes. This would make reading and the selection of good literature a habit for life.

WRITING, GRAMMAR, SPELLING.

Writing is one of the modes of thought expression. The fundamental necessity is *to have something to express*, some image to control and steady the hand, some earnest desire to communicate with others by means of writing. Skill in writing takes care of itself if the teacher writes rapidly and well. Technical skill is nine-tenths imitation. The main thing is the impulse which the teacher discerns, seizes upon, guides, and controls. The farm is rich with interesting subjects, rich for the novice of six, or the pupil of sixteen. Descriptions of animals, plants, forests, fields, pastures, hills, valleys, soils, the germination of seeds, the gardening, the shower, the clouds, the rainstorm, hailstorm, snowstorm, the cyclone, the raising of crops, the cutting and curing of hay, the harvest, the market—these are among the innumerable subjects that may be made of intense interest to the children of the country. The little ones may write a word, a line, or a paragraph; the older ones, pages.

And in such work comes the one sensible method of teaching spelling and grammar. Writing is spelling and punctuation, just as speech is fundamentally pronunciation. Using correct language is grammar, and where can pupils use correct language to better advantage than by writing under the direct impulse of thought?

MANUAL TRAINING, ART.

One central and invaluable thing gained on the farm is the necessity for and habit of work. All work on the farm should be honored in the schoolroom by expanding and concentrating it. The school should send back the children to the farm filled with the dignity of labor.

The work of the farm, in a broad sense, is manual training, but most farm boys get a coarse way of doing manual training. They do not learn to use their hands expertly as they should. On all farms there should be workshops for the mending of tools, construction of materials and apparatus for farm work, and in the country school there should also be a small manual training department in which pupils may be trained to use their hands skillfully in making things needed for the farm and the home.

No argument is here made for manual training; I would, however, enter an earnest plea for its adoption in the school on the score that it would make labor both honorable and interesting, and that its value as a potent factor in the development of the brain would be recognized and appreciated by both parents and teachers.

Apparatus for experiment could be made with a small outfit, a bench, a few tools, lumber, and metals. Much of the lumber could be brought by the pupils from the farm. They could cut the wood. If it needed sawing, it could be sawed at the mill. Wood *manual training is one* of the best ways to learn the uses of woods. There should be a *small forge, and some* work in iron and other metals as well. Every boy and girl should

have a work bench at home and wood-carving materials, to develop the instinctive hal of whittling into something useful and ornamental. Long winter evenings could profitably utilized in manual training and the exercise of the arts.

The objects of art are countless, the modeling, painting, and drawing of land s faces in geography, and illustrations in geology and mineralogy. Landscape and pla life furnish a great number of subjects for painting. Children have a perfect passion drawing, until it is crushed by over-attempts at accuracy, or by the drawing of flat copi With a good blackboard, which is the best piece of educational apparatus ever invent for school or home, children could show the different kinds of crops; draw cornstall grasses, flowers, and trees. Of course, these drawings would be crude, but at the same ti they would be satisfactory to the child, and justly, for they would correspond with images; the drawing, in turn, would stimulate observation, and the result would be clea insight. Exact drawing could be introduced in measuring, or arithmetic, and in maki projection drawings or manual training. Experience has shown that children take gr delight in such work, and that is in the highest degree educative.

Art study leads to the cultivation of taste, and many farmhouses, many cold a desolate sitting-rooms could be made beautiful by the art of the children; and th comfort enhanced by the manual training. Every effort should be made to project t work of the school into the life of the child. Invention may be stimulated by aski pupils to plan a hen house, wood shed, barn, farmhouse, and the selection of trees a shrubs to beautify yard, garden, and landscape.

INDUSTRIES AND COMMERCE.

The study of the commercial side of farm products should have its place in the sch The cost, the selection, the use of crops, and their value in selling. Here arithmetic a bookkeeping would come in. Transportation of crops would have its place, the tea the railroads. Where farm products are consumed. The subject of farm tools, inst ments of work, may be studied. How crops are prepared for the market; the qu tion of mills; the preservation of foods; barns; winter protection of cattle; ensila Transportation, beasts of burden, wagons, railroads, steamboats, in our own and fore countries. The beginning of history, how others live and have lived, is involved this idea of commerce.

The geographical distribution of soil may be considered, as well as the distri tion of air, moisture, heat, and plant life, and through the careful and thoughtful stu of the farm the whole earth, in time, may be brought to the child.

HISTORY.

The elements of history are everywhere present on the farm. The history of farmi tools, from the sickle to the reaper; from the crude plow of the poet to the steam plow today; from the hoe to the cultivator. The history of butter-making, from the old-fa ioned churn to the model creamery. The story of the mill; the history of the potato; maize; of the tomato. How beets are now competing with sugar cane. If there is experimental station in the neighborhood, it should be used as an auxiliary to the sch where the history and present status of agriculture may be studied.

Most towns in the eastern states, and some in the West, have interesting lo histories. There are generally stories of the Indians, of settlements, of colonization, noted men and women, of the part taken by the citizens in the Civil War. A strong l for history can be induced and fostered by beginning this study close to the home.

The breakfast and dinner table furnishes excellent starting points in the study history. How much does the farm in itself furnish of the food of the family? What obtained outside, and where is it obtained? History of the making of cloth, the story the *spinning wheel and the spinning* jenny; the hand loom and the power loom.

study of the inventions used on the farm will lead directly to the biographies of their inventors and the relation of machinery to human progress. The history of roads and road making, back to the time of the Romans. There should be lessons in every school upon the necessity and practicability of good roads, and the best methods and material for making them.

CONCLUSION.

The tremendous advantage of a rational course of work in country schools is that it would make a strong, binding union of the home and the school, the farm methods and the school methods. It would bring the farm into the school, and project the school into the farm. It would give parent and teacher one motive, in the carrying out of which both could heartily join. The parent would appreciate and judge fairly the work of the school, the teacher would honor, dignify, and elevate the work of the farm. Farmer and housewife would be ready to discuss the methods of the farm and housekeeping in the school. Children, parents, and teachers could meet at stated periods and hold discussions in the direction of their highest interests. One of the best meetings I ever attended was a union of grangers and teachers in Oceana county, Mich. One hour was devoted to a discussion of how to raise potatoes, and the next was given to the education of children.

The farmers would become deeply interested in having libraries in the schools, carefully selected. Long winter evenings could be spent around the fireside in mutual study; parents helping children, and the children, in turn, arousing and stimulating parents.

Country life too often fails in the proper social conditions. It tends to isolation. A common purpose of education would obviate this. The farmer would often invite the school to visit his farm, and to study it. Pleasant and profitable social meetings would be the order of the day. The teacher with clear ideas of what education ought to be would bring the people of a district together to discuss the welfare of their children. Exhibits of pupils' work, of manual training and the arts would naturally follow and greatly increase the interest.

It is an indisputable fact that cities draw largely upon the country for men of action and affairs. There are, no doubt, some notable exceptions to this rule, but in the main, the leaders, both men and women, successful manufacturers, bankers, doctors, lawyers, ministers, statesmen, have received their early education upon the farm or in the workshop.

Education deserves to be regarded in a broader and more rational light. Real education should be read in terms of character — character translated into action. Sound judgment, common sense, wisdom acquired by observation and tempered by experience, with genius to help one's self, and power to plan and execute, entitle a man to a diploma from the world at large, if not from a university. Education which is worthy the name generates the power that penetrates life and makes it better.

No method, no system of schools, no enrichment of courses of study, not even the most successful of teachers, can ever take the place in fundamental education of the farm and the workshop. No matter how good the city schools may be, or may be made; no matter how good the state of society may be, the vital reinforcements of city life that lead to progress and prosperity, so far as we can see, must always come from the sturdy stock of the farm. This fact, upon which most educators agree, puts upon the country school an immense responsibility. It is no small office to train the men and women who are to lead and guide the future of the republic.

The country schools have every advantage, so far as material means are concerned; their environment is rich in organic and inorganic forms; but in one thing they are lacking — the teacher who can utilize that which offers itself in such abundance. This is a *want which every thoughtful* person deplores, a want that will be met when the farmers *themselves realize* what a powerful influence for good their schools may be made.

When skill, expertness, and insight control the methods of country schools; wh excellent teachers remain in the same schools year after year, the already powerful infl ence of country life upon the destinies of the nation will be mightily enhanced.

A large majority of boys and girls upon the farm entertain mistaken notions of li in cities, and early form a desire to enter into the seemingly greater advantages to found in such centers. This leads to the congestion of cities, and disturbs the soci balance. School education alone can cope with this disease of the body politic, and th by fostering an interest in farm life and farm work.

Boys must be led to see something more in farm life than patient, continuous work planting, sowing, care-taking, and reaping. Many a young man leaves the farm to becor a mere counter-jumper in the city, who, if he had the right education, would make hims an influential and successful farmer.

My plea, then, is that the country school should make farm labor and all lab honorable; should dignify it; should show that the environment of the country fu nishes inexhaustible resources for intellectual life; should see to it that the æsthet side of child nature be assiduously cultivated; that the child bring a loving heart nature, have an appreciative eye for beautiful things; that he be led to see t possibilities in the landscape of the farm — the necessity of making excellent roac well lined with shade trees; that the so-called practical things of life, hard and seve labor, should have their highest outcome in the cultivation of the love of the beautiful life — that love which leads the soul to profound reverence for all things of earth, becau they are loving gifts of an infinite God.

FRANCIS W. PARKER.

Chicago Normal School.

APPENDIX I.

THE COUNTRY-SCHOOL PROBLEM.

[A paper read before the National Council of Education, July 10, 1894, by Emers E. White, LL.D.]

It is not my purpose to deny or obscure the real difficulties involved in what is call "The Country-School Problem." This is not a question of nomenclature, but a proble of school organization under special conditions.

The problem may thus be stated:

Given a school of twenty to forty pupils from five and six to, say, sixteen years of ag accommodated in one room and taught by one teacher.

To find the best possible organization and administration that the conditions w permit.

The facts that enter into the problem are (1) that the pupils possess very unequal abili and attainments, and those who at a given time are nearly equal in attainment make uneq and varying progress; (2) that the pupils need instruction and training adapted to th ability and needs each successive term, and hence this instruction must have *sequen* thus permitting progress; and (3) that the health and physical endurance of teacher a pupils limit the daily school session to about six hours. It is also to be kept in mind th the problem involves the providing of the best possible instruction and training not in o branch, not merely in "the three R's," but in all the essential elementary branches.

I. NON-CLASSIFICATION SOLUTION.

The first solution proposed makes no provision for the classification of the pupils, b each pupil is taught by *himself* in all branches of study. It is seen that this plan gives

a minimum as many separate teaching exercises as there are pupils in the school, provided each pupil has only one daily lesson. If only "the three R's" are taught, and each separately, there will be three times as many teaching exercises as there are pupils, and, if the three exercises for each pupil are combined in one, the length of time devoted to each exercise must be increased. But the modern programme of school instruction includes from five to seven school arts, and, in case of the more advanced pupils, several additional branches of study, as geography, English grammar, history, and physiology.

It is unnecessary to take time to show that it is not possible for one teacher to instruct twenty or more pupils, each by himself, in the essential elementary branches. The number of exercises thus required reduces the length of each to so short a time that no efficient instruction is possible; and hence the non-classification solution proposed for the country school may be dismissed as *impracticable*. The plan of individual instruction is only feasible in a school composed of very few pupils.

We sometimes hear of the old-time country school in which there were no classes, each pupil being taught by himself, if taught at all; but I am satisfied that this school exists in the imagination, and not in history. If it ever had an existence it certainly preceded the organization of the common school, if it did not precede any school composed of more than ten pupils. Even ten pupils under one teacher necessitate some classification to permit any efficient instruction or drill.

My father was a pupil in one of the early common schools in New England, and I was a pupil in a still more primitive school in the then backwoods of Ohio, but neither my father nor myself ever saw the wholly unclassified country school of which the present generation of teachers is hearing. In at least two of the three *common* branches — *i. e.*, branches common to all — the pupils in the old-time school were classified. It is true that little attempt at classification was made in teaching the ABC's or the *a-b-abs*, but necessity forced an early classification in both reading and spelling — imperfect, it is true, but necessary and helpful. I now see in my mind's eye the row of big boys and girls that sat on the back seats and read together in the old English reader, and I also see the rows of boys and girls, who constituted the successive classes in spelling, standing on the floor and "toeing the mark."

No attempt was made in the first schools which I attended at classification in arithmetic, and later the attempt was first confined to the multiplication table, which few pupils perfectly mastered, and so common drills were feasible. As a rule, each pupil "ciphered" by himself, at his own gait, going to the teacher or some pupil for assistance, when needed. The fact that most of the pupils never reached fractions, and fewer ever acquired much skill in integer processes, is evidence of the weakness of individual work even in such a study as arithmetic.

A few clever pupils who needed only opportunity for study made good progress without instruction, sometimes remarkable progress, and this was not only true in arithmetic, but also in geography and English grammar, when these branches were reached. The lack of classification in these studies was doubtless an advantage to these few exceptional pupils, but no one who actually knows the old-time country school can commend the progress made by nine-tenths of its pupils. It is not too much to claim that its helpfulness to the great majority of its pupils was increased by improved and wider classification. I well remember the first introduction of classification in arithmetic in the rural schools of my native state. I now see the little blackboard that was first nailed to the wall of that primitive schoolhouse, for, though scarcely in my teens, I was installed as teacher for the first class formed in arithmetic.

When I passed from the dignity of a pupil-teacher to the honors of a teacher, my *best work for* the country school was in the introduction of improved classification — not *only in reading and spelling*, but in all the branches taught. Nearly all of the pupils fell

into groups or classes with positive advantage. Those who could work ahead with in dental assistance were permitted and encouraged to do so.

II. THE GRADED-SCHOOL SOLUTION.

Another solution proposed is the adoption of a graded course of study with term se tions — the annual school session being divided into, say, two terms — the plan of gradi adopted in most cities. In other words, the solution proposed is the grading of count schools with one teacher on the plan of the graded schools in cities.

It is seen that this organization divides an elementary course of study into at lea sixteen sections, each including sections of the several branches, and it separates tl pupils into sixteen or more corresponding grades, if there be a term interval between tl grades.[1] The fact that the pupils in each grade study several branches necessitates many class exercises as there are branches of study. It is thus seen that an average three class exercises in each grade gives at least forty-eight daily exercises.

It is true that in practice there may be no pupils in several of these term grades, b the reduction in the number of classes thus occasioned will be fully offset by the fact th the pupils in several upper grades study more than three branches, and thus require mo than three class exercises to each grade. It seems unnecessary to add that such a clas fication of the one-teacher school is wholly impracticable. I know of no successf attempt to grade the country school with a *term interval* between the grades.

The more common mode of grading the country school is the nominal adoption the *year* or session interval between the grades. When this plan of grading is strict adhered to, and there are pupils in all the grades, there are as many separate class exe cises as there are year sections in the course of study multiplied by the average number branches therein. This gives from thirty to forty class exercises — too many for satisfa tory class instruction and drill. But in a school of thirty to forty pupils there are nece sarily very few pupils in the upper grades, and none in some grades. These breaks a occasioned by the attendance of pupils only a part of the school session, by the fa ure of pupils to do the work assigned them, and other causes. It thus often happens th country schools may not *at any one time* actually contain more than five or six grad of pupils, even when they are following a graded course of study with eight or nine-ye sections; but the reduction in the number of class exercises thus occasioned does not mal a strict adherence to this city plan of grading feasible. Hence in practice various moc fications are made; and some of these are easily made if the school be not dominated b and sacrificed to, the fetich called the "graded system." Several of these feasible moc fications may be worthy of consideration.

1. Since the several classes are all taught by the same teacher it is feasible to pe mit pupils to recite in different grades, strict grading being sacrificed to the best possib classification *in each branch*. Thus a pupil may recite in the fifth grade in arithmet the fourth in geography, and so on.

This modification of the graded system is practicable only to a limited extent cities, since the several grades of pupils occupy, as a rule, separate rooms and are taug by different teachers, and they are thus required to keep a common step in *all* the branch of the course.

2. Since the upper classes in a country school often contain not more than two

[1] N. B. — The term "grades" is used in this paper to denote those formal divisions pupils which correspond to the more permanent divisions in the course of study, which a separated by transitional or promotion lines. The pupils in a given grade may be taug in one or more classes in all the branches, or they may be taught in one class in son branches, and in several classes in other branches; and these classes may be chang from time to time, and without reference to grade divisions or intervals. It is thus se that the terms gradation and classification are not used as synonymous.

three pupils, it is feasible for a bright pupil to work ahead of his class while he continues to recite in it. Thus a pupil may be studying decimal fractions or denominate numbers while reciting with advantage in common fractions; for, while these daily reviews in common fractions may give him little new knowledge, they will increase his skill in fractional processes — and skill in numerical processes is the chief end of elementary training in arithmetic. Indeed, skill of some sort is the chief end of more than half of the exercises in the elementary school, and this requires *repeated action*. Experience shows that it is entirely feasible for capable pupils to work ahead of their classes in such studies as arithmetic, geography, history, etc., and that this is often successfully done with very little assistance. It is thus seen that the one-teacher school permits a happy combination of class instruction and individual work, especially in the case of bright pupils.

3. Another modification may be made in certain art studies, as writing, language, drawing, and singing. For the purpose of drill in these branches, a country school may readily be divided into three classes, and these, except in music, may be taught *simultaneously*, as will be more fully shown later. This arrangement not only reduces the number of classes, but it greatly increases the class practice of the pupils. Nor is it found a serious objection that the classes in these branches are, at any given time, two or more years apart. These arts have phases that correspond respectively to the three psychical phases through which elementary pupils pass as they advance in the course; and the wise teacher can readily so adapt class instruction and drill to the common needs of the pupils in each phase of progress as to afford to all valuable practice. This is successfully done in many country schools.

The feasibility of these and other modifications have saved the country school in many instances from the Procrustean evils that have so often characterized the graded system in cities. The defects of the graded system in cities does not necessarily inhere in the system as it may be practically administered in one-teacher schools in the country. The year interval between grades in cities well-nigh necessitates the "lock-step" advance of the pupils. The classes are too large (or are supposed to be) to permit the teacher to give needed assistance to the strong pupils who may be capable of working ahead in any or all of the studies of a grade, and, at the same time, the interval between the classes is too wide to permit the pupils, with very *few* exceptions, "to jump over" to the next higher grade. We have seen many city classes in which the pupils in the upper third of the class were in ability one year in advance of those in the lower third, and yet these pupils were chained together for one year, and then the only mode of relief was the non-promotion of the lower-third pupils, thus necessitating their going over again an entire year's work. Thoughtful teachers know what this means. The pregnant fact is that the year interval between the classes in elementary schools in cities is incompatible with a flexible classification of pupils. It is everywhere attended with a serious sacrifice of time and opportunity.

In the one-teacher school these evils of the graded system may be somewhat lessened, but, after all feasible modifications have been made, the system, with even a nominal year interval between the grades, is not a satisfactory organization of the country school. The modifications permitted relate chiefly to the classification and advancement of the pupils, but the course of study must be followed. *The essential thing in the graded system is the graded course of study.* To abandon the prescribed sequence and co-ordination of the topics and exercises in the course of study is to give up the system *as such*. But experience shows that it is not practicable to prescribe an "invariable order" of topics and exercises for a one-teacher school. The limitations and conditions of such a school necessitate variations from the prescribed course in order to reduce the number of class exercises, and hence the course of study as well as the grading of pupils must be flexible. System and order must often be sacrificed to the needs of the pupils and the limita-

tions of the teacher. The adoption of well-adjusted courses of study for country scho has unquestionably resulted in great good, but the blind following of such courses in ti and order has often resulted in loss. Much of the difficulty that has attended the grad system in country schools has been thus occasioned. What the one-teacher sch imperatively demands is not only a flexible and adjustable classification of pupils, bu *flexible course of study* — that is, a course of study which permits changes in the order topics whenever such changes will result in fewer class exercises with a positive gain better instruction.

This leads to the consideration of a third solution of the problem before us, and t may be called —

III. THE THREE-GRADE SOLUTION.

The three-grade organization of the country school, or, if preferred, the thr department organization, is based on the psychical transitions which appear in an e mentary course of training.

The first of these psychical periods includes the kindergarten and the lower prim classes, with pupils from four or five to eight years of age. This is pre-eminently t objective period of training in which primary knowledge is taught objectively, and prim skill in reading, writing, number, language, etc., is acquired by doing, largely by imi tion. The reader is the only book needed by the pupils.

This is followed by, say, three years that may be called the transitional or mid period of elementary training. In this period pupils pass increasingly from concr facts to their simpler generalizations, from processes to rules, and from the known to t related unknown by either imagination or thought; and skill in the several school arts increased by practice under guidance, increasingly under ideals. The only text-boc needed are in reading, arithmetic (first book), and, later, geography (elementary), a these, both in matter and method, should be intelligently adapted to the psychical c ditions and needs of young pupils. This is pre-eminently the *fact and skill period* elementary training.

The next three or four years constitute what may be called the advanced or gramm period. The pupils have now sufficient skill in interpreting written or printed langua and sufficient thought power to study, with proper instruction, a complete arithmetic school geography, and later (seventh and eighth school years) English grammar, Unit States history, physiology, and the elements of natural science.

It is seen that the grading of the elementary school on this psychical basis is ab the same as that secured by its division into three departments when the number of pup is sufficient to employ three teachers — one for the lower or primary classes, another the secondary or middle classes, and a third for the more advanced pupils.

This is a natural and simple grading for a country school with one teacher. T distinction in the work of the three grades or divisions is sufficiently marked to permit definite statement of the knowledge and skill to be acquired in each; and, at the sa time, the pupils in each grade can, from term to term, be reclassified, thus keeping t number of classes as few as possible and at the same time putting each pupil where can make the most progress.

The number of classes in the two upper grades need not exceed two each in a branch, and not more than three separate classes will be needed in any branch in t primary grade — making not more than six or seven different classes in any branch, w an average of not more than four classes in the principal branches. The exercises writing, language, drawing, and other arts can each be given *in one period* — a v important consideration, since it greatly reduces the number of exercises and, at the sa *time, secures needed instruction* and desired progress.

The course of study can readily be arranged on the same basis. The studie

exercises of each grade may be grouped, thus dividing the course into three well-defined sections — primary, middle, and advanced — and the attainments required for promotion from one grade to the next higher can be definitely prescribed. It is not necessary to divide the course into year and term sections with a prescribed order of subjects and parts of subjects for each term, as is often done in graded courses for cities. There should be a division of the course into three sections, with a general order or sequence of topics in each, but the teacher should be left free to form classes with varying intervals between them, and the progress of each class should not be fixed by a time schedule — as is sometimes done in city schools with many teachers. To reduce the number of classes in a given grade it may be necessary to take up parts of subjects in a different order from that laid down in the course of study, and no two classes may make equal progress.

The essential provision is that the work provided for each grade be completed *as a condition of promotion to the next higher grade.* This will establish a clear distinction between the several grades, and, at the same time, it will allow that flexibility of classification *between* grade lines which is essential in a one-teacher school.

It is not meant that pupils shall be stopped at the line that separates two grades until they have reached the standard in *all* branches of the lower grade, as is generally required when a school is divided into three departments, each under a separate teacher and occupying a separate room. In a one-teacher school pupils may and should be permitted to pass a grade line in any branch when they are prepared to do the work of the next higher grade. In practice it will be found that most pupils can, with advantage, cross the grade line in all branches at the same time, but this result should not be forced.

THREE-GRADE PROGRAMME.

A course of study on these three psychical grades of work and attainment makes a three-grade programme of class exercises and seat work both feasible and desirable.

I have elsewhere[1] presented such a programme with a full statement of its uses and advantages in a one-teacher school. It must suffice to insert the programme here, with a brief explanation.

This programme indicates not only the class exercises, but also the study or seat work, the class exercises being denoted by bold-face type and the study or seat work by common type. The day session of the school is divided into periods of twenty, twenty-five, and thirty minutes each, the spelling drills in the two upper grades being considered one period; and the teacher's time is divided equitably among the three grades of pupils. The A-grade pupils have eight exercises each day, the B-grade pupils six exercises, and the C-grade pupils five; but, as is seen, the A-grade pupils have two more studies than the B-grade, and the B-grade pupils have one more study than the C-grade. The extra time required to prepare and direct the seat work in Grade C will make the time devoted by the teacher to this grade nearly, if not quite, equal to that devoted to the B-grade.

A rural school of some thirty pupils will probably have two classes in several branches in the A-grade, two classes in one or more branches in the B-grade, and possibly three classes in the C-grade; making in all some seven different classes of pupils. The time allotted to any branch (as arithmetic) in a given grade must be divided between the several classes (if there be more than one class in the grade), but not equally from day to day, the time devoted to each class depending on the nature of the lessons. One day the upper class in Grade A in arithmetic, for example, may have only ten minutes, and the lower class fifteen minutes, and the next day this may be reversed. What the programme requires is *that the several exercises* do not together exceed the time assigned to the grade. Writing, *language, and drawing* in all three grades are to be taught simultaneously in the same

[1] *White's* "School Management," pp. 86–94.

THREE-GRADE PROGRAMME.*

Closing Time	Minutes	Primary (C)	Secondary (B)	Advanced (A)
9.10	10	OPENING EXERCISES		
9.35	25	Seat Work †	Arithmetic	**Arithmetic**
10.00	25	Number On slate or with objects	**Arithmetic**	Geography
10.25	25	**Number**	Geography	Geography
10.45	20	Form Work Paper folding, stick laying, etc	Geography	**Geography**
10.55	10	RECESS		
11.15	20	Silent Reading	**Geography**	Grammar
11.35	20	**Reading and Spelling**	Form Work Map draw'g, sand molding, etc	Grammar
12.00	25	Excused from School	Reading	**Grammar**
		NOON INTERMISSION		
1.10	10	†	†	†
1.30	20	Form Work Clay model'g, paper cutt'g, etc	**Reading**	Reading
1.50	20	Silent Reading	Seat Work †	**Reading**
2.10	20	**Reading and Spelling**	Animal or Plant Study	U. S. History or Physiology
2.40	30	**Writing**[2] **or Language**[3]	**Writing**[2] **or Language**[3]	**Writing**[2] **or Language**[3]
2.50	10	RECESS		
3.10	20	Number On slate or with objects	Spelling	**U. S. History or Physiology**
3.35	25	**Drawing,**[2] **Singing,**[2] **or Moral Instruction**[1]	**Drawing,**[2] **Singing,**[2] **or Moral Instruction**[1]	**Drawing,**[2] **Singing or Moral Instructio**
3.50	15	Excused from School	**Spelling**	Spelling
4.00	10		Arithmetic	**Spelling**

† As may be provided for by the teacher.

NOTES: The small figures at right indicate the number of lessons a week.

United States history may be taught the first half of the session, and physiology t
d half; or each branch may have two lessons a week.

On Friday the last twenty-five minutes may be devoted to instruction in hygie
erance, physics, natural history, etc.

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period. The inexperienced teacher may not see how this can be successfully done, but the apparent difficulty has been solved in hundreds of schools.

The most hopeful improvement of the country school lies in the adoption of a simpler grading than that of the city school, a more flexible classification, with opportunity for individual study and progress, and a workable daily programme. It needs system, but not rigidity — an elastic system adapted to its conditions and limitations. The danger is that the rural school may be sacrificed to rigid grading, as has been true in so many cities. What the country school needs is not a Procrustean system of grading and promotions, but such an organization as will permit its single-handed teacher and diverse pupils to make the best possible use of time and strength.

It is idle to talk of abandoning all attempts to improve the classification of country schools. Attempts at classification in reading and spelling are as old as the school itself, and classification in other branches has attended, if it has not made possible, most improvements that have been made. The disappointments have usually been due to unwise attempts to introduce into rural schools the rigid graded system as developed in the cities. Such attempts ignore conditions and limitations.

It seems wise to add here that the one-teacher school will not permit a perfect organization. It has necessary limitations, and, after the best possible has been done, it will still have its imperfections. It is, however, my belief that the teacher of a country school, if competent, has some advantage over the teacher of the "highly organized" city school. It is certainly possible to make the one-teacher school a most valuable agency for the elementary education of children.

REMARKS.

It seems important to call attention to the fact that the term "grade" in this paper is used in the sense of section or department, and not as synonymous with class. The term grade is applied to the three divisions of the pupils of a school, which correspond respectively to the three recognized psychical periods through which pupils pass as they advance from the kindergarten to the secondary school. It would possibly have been better if the term *section* had been used instead of grade, and, perhaps, still better if the word *group* had been employed, the term used by the subcommittee in its report. Indeed, the reader can substitute the terms *group* or *groups* for *grade* or *grades*, as the case may be, throughout the paper, without materially changing its meaning. The sense in which the term grade is used is explained in the footnote on page 163, and it is also made clear in the paper. The term applies not only to the three groups of pupils, but also to the corresponding divisions in the course of study.

The division of the course of study into three sections or groups has important practical advantages. Among these advantages are:

1. Needed freedom of classification and instruction in each section. This advantage can be fully appreciated only by those who have actually used the plan in rural schools. The fact that the subjects and disciplines in each of these sections are closely related facilitates reclassifications and sometimes a temporary union of classes.

2. A standard and an evidence of progress. The promotion of pupils from one section to the next higher is stimulating evidence of progress, and, as a result, the advancement of pupils from section to section affords a wholesome incentive throughout the entire course. The fact that pupils are known as primary, or secondary, or advanced (Group I., or Group II., or Group III.), affords both satisfaction and stimulus.

3. A needed reduction of class exercises in writing, drawing, language, and other school arts in which skill is the chief end. Reference to the programme on page 167 will show that instruction and drill in writing and language are provided for in only *one period* each day, and the same is true of drawing, singing, and moral instruction. This is not accomplished by making each of these subjects a general exercise for the entire school,

but the pupils in each section (group) have a lesson adapted to their ability and attai ments, thus securing desired progress from year to year. It is found entirely feasible teach the pupils of a rural school in each of the school arts in three sections (groups), an what is very important, the three section exercises can be taught *in one period*, as shov in the programme. The manner in which this is done in practice is shown in the write "School Management," p. 92, and the feasibility of the plan is attested by its successf use by hundreds of teachers. In teaching the several school arts, skill is the chief en and this can only be attained by guided practice. The needed preparatory instructi in any elementary art lesson can be given within five minutes, and hence in less th fifteen minutes the pupils in three sections, beginning with the highest, can be prepar for fruitful practice; and then the remaining part of the period can be devoted to inspection of the pupils' work in each section, the giving of needed instruction, etc. It true that physical exercises and even singing, as usually taught, can be made a gener exercise, but it would be a great gain if the pupils in the primary section, at least, we given separate instruction in music. No school art in which progress from year to year desirable should be taught in a rural school as a *general* exercise. The three-section pl affords time for instruction and practice, and secures desired progress.

4. A workable programme, one that regulates class exercises *and seat work*. I a confident that no rural teacher who uses a section (group) programme long enough become skillful will ever go back to a class programme with its numerous and unequ divisions of time. The regulation of the seat work of pupils is an important element school administration.

The great desideratum of the rural school is a practical reduction in the number daily class exercises. The three-section plan reduces the number of exercises in teachi the several school arts to a minimum, and it also facilitates a reduction in the number exercises in arithmetic, geography, history, and other branches which require previo preparation by the pupil. The manner in which this is accomplished is pointed out the paper. It is true that the very best that can be done in this direction still leaves t rural school with too many class exercises and, as a consequence, too little time in ea for satisfactory instruction. The brevity of class exercises is, however, in part offset the fact that the classes are *small*, and also by the further fact that the section programm permits a variation in the time given to exercises, the time depending *on the nature of t lesson*, the essential condition being that the time devoted to the classes in a given bran shall not exceed the time allotted to the section.

It seems unnecessary to guard the reader against the inference that the pupils in ea of the three sections are to be taught as one class in each branch, thus giving an interv of two or more years between successive classes. This is only true of *skill exercises art studies* — exercises that do not require previous preparation by pupils. In these a studies there may be an apparent interval of at least two years between the sections classes, but this is not a serious difficulty in actual practice. In the other branches t pupils in a section may be subdivided into classes, with a varying interval between the This interval need not be *common* to all the branches, as in graded schools in cities, b each branch may have its own interval, and this be unequal and varying. The interv between two successive classes in arithmetic in a section may not exceed one term, whi the interval between the corresponding classes in English grammar may be a year. It not only true that a uniform class interval of one year is incompatible with a workab classification of rural schools, but any *fixed* interval between classes results in rigidity an loss.

Nor is it desirable in a rural school to keep the classes in the several branches abrea as they advance in the course, as is the practice in graded schools. It is wholly unnec sary to keep a class in arithmetic, for example, "marking time" while the pupils

bringing up belated work in grammar or history. In a one-teacher school there is no serious loss or inconvenience if the pupils do not maintain the same rate of progress in all the branches of the course. What is needed is a free movement forward, not only of individual pupils, but of the several classes.

There is, in my judgment, no serious difficulty in teaching the pupils in a rural school in most instances in classes. This can readily be done in all art or skill branches, and in the other branches *most* of the pupils can be classified with advantage. When a pupil can not profitably keep step with a class, he should be permitted and encouraged to work by himself. It may be that in a term or so he will reach a class in which he can recite, at least for a time; and, while he is working by himself in one branch, he may be in classes in other branches.

The rural school must make provision for individual progress, but individual study and instruction should not prevent needed classification and a regulating system. A graded course of study, with its sequence of topics and exercises, and its division into natural sections, makes a return to the unclassified condition of the old-time country school impossible, as well as undesirable.

A hint of my ideal of a one-teacher rural school is given below by means of a graphic illustration. I take a school of thirty (30) pupils, and suppose twelve of these pupils to fall in Group I. (using the terminology of the subcommittee), ten in Group II., and eight in Group III. The pupils are designated by numbers, those in the first group by the exponent 1; those in the second group by the exponent 2; and those in the third group by the exponent 3.

	Group I. (C)	Group II. (B)	Group III. (A)
Reading and Spelling	$1^1\ 2^1\ 6^1\ 9^1\ 11^1$ $3^1\ 4^1\ 7^1\ 10^1\ 12^1$ $5^2\ 8^1$	$13^2\ 16^2\ 18^2\ 20^2$ $14^2\ 17^2\ 19^2\ 21^2$ 15^2	$22^2\ 25^3\ 28^3$ $23^3\ 26^3\ 29^3$ $24^3\ 27^3\ 30^3$
Arithmetic ..... Oral in Group I.	$1^1\ 2^1\ 7^1\ 8^1$ $3^1\ 4^1\ 9^1\ 10^1$ $5^1\ 6^1\ 11^1$	$12^1\ 13^2\ 19^2$ $14^2\ 15^2\ 18^2\ 20^2\ 21^2$ $16^2\ 17^2\ 22^2\ 23^3$	$24^3\ 30^3$ $25^3\ 27^3\ 28^3\ 29^3$ 26^3
Geography..... Oral in Group I.	$1^1\ 4^1\ 8^1\ 11^1$ $2^1\ 5^1\ 7^1\ 9^1\ 12^1$ $3^1\ 6^1\ 10^1$	$13^2\ 16^2\ 18^2\ 21^2$ $14^2\ 17^2\ 19^2\ 22^2$ $15^2\ 20^2$	$23^3\ 26^3$ $24^3\ 27^3\ 28^3\ 29^3\ 30^3$ 25^3
English Grammar.	For synthetic language exercises, see below		$23^3\ 26^3\ 28^3$ $24^3\ 29^3$ $25^3\ 27^3\ 30^3$
History and Physiology			$22^3\ 28^3$ $24^3\ 26^3\ 29^3$ $25^3\ 27^3\ 30^3$
Writing and Language.....	$1^1\ 5^1\ 9^1$ $2^1\ 6^1\ 10^1$ $3^1\ 7^1\ 11^1$ $4^1\ 8^1\ 12^1$	$13^2\ 16^2\ 19^2$ $14^2\ 17^2\ 20^2$ $15^2\ 18^2\ 21^2$ 22^2	$23^3\ 27^3$ $24^3\ 28^3$ $25^3\ 29^3$ $26^3\ 30^3$
Drawing, Singing, etc.....	$1^1\ 5^1\ 9^1$ $2^1\ 6^1\ 10^1$ $3^1\ 7^1\ 11^1$ $4^1\ 8^1\ 12^1$	$13^2\ 17^2$ $14^2\ 18^2\ 21^2$ $15^2\ 19^2\ 22^2$ $16^2\ 20^2$	$23^3\ 27^3$ $24^3\ 28^3$ $25^3\ 29^3$ $26^3\ 30^3$

Supposing the pupils to have a lesson daily in each branch or group of branches (*as indicated), the* above scheme gives only fifteen daily class exercises, not including those in *Group I. in reading* and spelling, number, and geography. Weekly exercises are not

represented. It is possible for a teacher to do good work with this number of exercises with small classes. The largest amount of individual work is found in Group III. In practice there would doubtless be more irregularities in classification than can well be shown in the illustration.

Columbus, O. EMERSON E. WHITE.

COURSE OF INSTRUCTION FOR RURAL SCHOOLS.

Prepared in accordance with the directions of the Committee of Twelve at its meeting in Chicago, November 18, 1896.

SUGGESTIONS.

[This course of study is arranged in four groups, partly with the thought that whenever the schools of a township are gathered at one or more central points the first two may constitute the basis of work for the lower, and the last two for the higher room. Whether the three-group system explained by Dr. White be used, or the four-group, as indicated in this course, must depend very largely upon the size and advancement of the school. The principles are the same in either case.—HENRY SABIN.]

"*The course of study is the measuring rod or scale which is used to determine at what point in the eight years' work in the elementary course a pupil's work has arrived. It should not be used as the Procrustean bed on which to stretch the work of the school in order to give uniformity.*" (Report of Subcommittee on Instruction and Discipline.)

It is the aim in this course of instruction to present the most essential topics in orderly sequence, without any prescription of methods of teaching. It can be begun at any age from five to seven; it can be continued, often with profit, to a later age than is here stated. It is believed that this course offers every facility for combinations of classes, for transfers of pupils, and for any system of alternation.

This course recognizes the essential elements entering into accepted courses of instruction. Each of the four groups comprises about two years' work. In these groups there will be divisions into sections — as (*a*), (*b*) — only when absolutely necessary. Experience has shown that, within the age limits of the several groups, the work as laid down can be done. Whenever a pupil is able to do the work of the succeeding group he should pass to it. In small schools there will be much individual instruction, and in these will seldom be found pupils representing all these grades of work. In large schools, with one teacher, a skilful teacher can to a considerable extent secure assistance from the more advanced pupils in certain work with the younger, to the mutual advantage of teacher and taught, as well as to the school as a whole. This has been done in this country, and is done throughout England today under the pupil-teacher system.

Whenever several schools working on such a course are consolidated so as to employ two teachers, if one teacher take Groups I. and II., and the other Groups III. and IV., the school is at once graded into a primary and a grammar school, and the next step in gradation will give one group to each teacher. In this gradation the work of each group will be expanded as circumstances allow. If, in the course as here laid down, a line of work — as elements of science — must be omitted, the time can be added to other subjects; if in some subjects — as elements of science and morals — but few lessons can be given, even these lessons, carefully prepared and well taught, will tend to make the teacher a better teacher, the pupil a more thoughtful pupil, and to raise the standard of the school.

To carry out such a plan of work as is here outlined, the pupil as he advances must do more and more for himself under the guidance of the teacher, very much to the advantage of the pupil. Thus, in arithmetic, there is provision for but two formal recitations per week in Group III.; for but one in Group IV. For the rest the pupil learns to do by doing.

The studies are grouped, each group comprising about two years' work:

	GROUP I. (5-7 years.)	GROUP II. (7-9 years.)
Reading.	(*a*) First exercises in reading; from blackboard and chart; Primer and First Reader; and appropriate literature.	(*a*) Second Reader and literature of similar grade. Fables and folk stories, etc.
	(*b*) First and Second Readers, and other reading of similar grade.	(*b*) Third Reader or books of similar grade. Literature as supplementary readings.
	Children should be taught carefully such selections as will awaken interest and lead to a desire to read for themselves. In all grades children should memorize choice selections appropriate to their age.	(See general directions in I.)
Spelling.	Taught chiefly in connection with reading Oral and written.	Taught chiefly in connection with reading and other studies of group. Chiefly written.
Writing.	In this section the child should learn to write legibly and neatly, and should form the habit of writing with correct position of paper, body, and hand. Use the pen *early*.	Use simplest forms of letters; train to uniformity in spacing between letters and words, and in size and height of letters; in short, in all the qualities which constitute a neat and legible written page. Insist upon careful penmanship in all written work.

	GROUP III. (9-11 years.)	GROUP IV. (11-13 years.)
Reading.	Fourth Reader at discretion of teacher for drill; the reading should be largely of literature, as supplementary reading. The drill should be mainly in the reader, and the choice of literature as supplementary reading should be such as the pupil can read with such ease as to give pleasure and thus develop a desire to read good literature. Take great care to cultivate a taste for good reading. Train pupils in proper use of the library.	The reading of good literature, as much as can be carefully read. Memorizing of choice selections should receive careful attention. Encourage home reading. III. and IV. should constitute one class each, and the reading lesson drill need not be a daily exercise. From the first give careful attention to the cultivation of the speaking voice.
Spelling.	Words to be selected chiefly from reading and other studies of group. Chiefly written.	Words to be selected from studies of group, or spelling-book. To be taught chiefly in connection with written work.
Writing.	See Group II. Much practice to give ease and rapidity, never sacrificing legibility and neatness. Much writing, to form the habit of easily expressing thought with the pen.	See Group III. Writing in this group should be chiefly in composition, in written lessons, and reviews, in practice in business forms, and in correspondence.

	GROUP I. (5-7 years.)	GROUP II. (7-9 years.)
Language.	(*a*) Conversational lessons on familiar experiences and familiar things. Reproduction of stories told by the teacher; invention of stories suggested by pictures, etc. All this will be training in observation and thinking as well as in expression. Great care is necessary as to choice of words and tones of voice.	(*a*) See (*b*), Group I. Combination of oral and written work. Seek variety in subjects. Base lessons on nature lessons, readings, etc. Careful attention to form and use of complete sentences in recitation and conversation, to purity of tone, clearness of enunciation, correctness of pronunciation in speaking, to legibility and neatness in writing.
	(*b*) Similar to (*a*), adding written to oral expression; instruction in correctness of the written forms, as the form of the sentences, the use of capitals and punctuation. Memorizing of choice selections.	(*b*) Work of previous years continued and expanded; oral narration, invention (from pictures, etc.), description, with written sentences from the same; letter writing, with special attention to the general form of the letter; careful attention to the vocabulary of the child. Memorizing of choice selections.
		In much of this work all the group can be taught as one class, but pupils of very unequal advancement should not be classed together.
History.	Short stories, such as will interest the child, drawn from biography, history, and travels. Explanation of historical pictures. The teacher must have at hand appropriate books for the readings by herself or by the pupils, hence the necessity for a school library.	See Group I. Conversations on current events within the knowledge or easy comprehension of the child. Conversations, stories, and readings on the lives of eminent historical characters, and on the memorable in historical events, such as can be easily imagined and comprehended by the child. National manners and customs and modes of life, such as can be fully illustrated. All this instruction must be made clear and interesting by stories, descriptions, and illustration.

	GROUP III. (9-11 years.)	GROUP IV. (11-13 years.)
Language.	See Group II. Much written work in connection with and based upon the school work in its various departments. The sentence and its parts; general classification of words into parts of speech according to their use in the sentence, not teaching definitions nor treating of subdivisions. Careful teaching of the construction of the paragraph. Letter writing, with special reference to correct forms of social and business letters. Readings in literature by teacher and by pupil in school and home. Memorizing of choice selections long enough to have unity in themselves. Some text-book of language lessons must be used in the rural schools, in order that a course of teaching may be carried out effectually.	(*a*) Letter writing, with special reference to subject-matter, to form and expression. Much writing in connection with school work, and from outlines wrought out by teacher and pupils. Throughout the course careful attention should be paid to the correction and enlargement of the pupil's vocabulary. (*b*) A course in grammar by rational use of a text-book. Preparation of plans for themes by the pupil, and writing from them. (*c*) Readings in literature by pupils in school and home. Memorizing of choice selections long enough to have unity in themselves. All written lessons and examinations should be so planned that they will be lessons in composition as well. By this course of instruction the pupil should now be able to express his own thoughts clearly, in correct form, and in well-chosen words.
History.	See Group II. Extension of course of Group II., with wider range, and with more and more readings by the pupil. Special attention to biography, with oral and written reproduction. Readings in United States history. See IV. In III. and IV. the course is by readings or text-book study by the pupil.	(*a*) Selected epochs of general history, with study of leading historical characters; a course of readings and of conversations. Main object to develop a love for historical reading. (*b*) A course of study in United States history.

	GROUP I. (5-7 years.)	GROUP II. (7-9 years.)
Geography.	Familiar conversations and simple preparatory exercises, serving to excite a spirit of observation in the child by leading him to observe the most common phenomena of earth and sky. Lessons on relative positions of objects, and distances. Points of compass learned from position of the sun, and applied. Oral lessons to teach terms of geographical description from the child's own observation. Modeling in sand. Stories of travel. Object lessons on products, domestic and foreign. These lessons in I. and II. are of necessity mainly oral until the pupil can read fairly well; then geographical readers and primary geographies will give much assistance.	See Group I. Home geography: Observations of phenomena of earth and sky; of the seasons; of contour, surface, mountain, valley, plain, brook, river, pond, soils, vegetation; in short, of whatever elements of geographical study can be brought under the observation of the child, that his knowledge of his environment may serve as a basis for his future studies of the world. Modeling in sand. Notion of map. Extension of study to immediately related regions. Notion of form of the earth; the globe. Illustrated lessons on races of men, and on the picturesque and curious in their customs and manner of life.
Arithmetic.	(*a*) Instruction at first entirely objective; objects gradually discarded as the facts are learned. Numbers and the combinations which form them up to 9. Throughout the course the child must learn through his own perceptions and self-activity. (*b*) Combinations represented by the digits in pairs up to 9 and 9. The fundamental operations or computations taught, so far as possible, while teaching the combinations; thus $3+1=4, 2+2=4$; 3 and 1 are how many? (addition); 3 and how many are 4? (subtraction); two 2's are how many? (multiplication); how many 2's in 4? (division); etc. Fractions ½, ¼, ⅛. Grouping by tens, to give the fundamental idea of the decimal system. (The course in combinations (*a*) and (*b*) follows the grouping of the decimal system.) Reading and writing of numbers to 100. Constant application to concrete problems. Number lessons in Group I. are mainly oral. Simple problems involving addition, subtraction, multiplication, and division, using numbers of not more than three places.	See Group I. (*a*) Reading and writing three and four place numbers. All the fundamental operations with numbers to 1,000. Values and relations of coins in United States money. Exercises with fractions ½, ¼, ⅛, ⅓, ⅙. Many concrete problems with much objective illustration. Establish connection between arithmetic and the experiences and businesses of farm life by simple, interesting, varied problems. Treat one difficulty at a time. (*b*) Writing decimals to one, two, three places; addition and subtraction of the same. Common fractions with one digit for denominator. The units of measures and weights objectively taught; simple exercises involving compound numbers. Rapid calculations with small numbers and easy problems. Objects for counting and combinations in the first steps, and weights and measures illustrating all the tables taught, are necessary. The child should weigh and measure for himself before he is questioned in relative values.

) UP III. (9-11 years.)	GROUP IV. (11-13 years.)	
roup II. Continents and d and water masses. North and United States, with l treatment of other parts vorld, in connection with nd with current events. the study of geography correlations with other sub- pecially with history, liter- nguage.	(*a*) See Group III. Study of foreign countries, apportioning the time devoted to them, according to their relative interest and importance. (*b*) Work of this group to be divided if necessary. The use of modeling, map drawing, and the various means of illustration is presupposed throughout the course in geography, and also the treatment of physical, mathematical, industrial, and commercial geography, in due order and degree. As the subject will usually be taught in the rural school with the aid of text-books in which these topics are developed, it is deemed unnecessary to enter into details in this statement.	**Geography.**
e Group II. Compound and common fractions, eated.	(*a*) See Group III. Percentage with applications to business.	**Arithmetic.**
cimal fractions and per- with common business ons in easy problems.	(*b*) Ratio and proportion; simple treatment of square and cube root. Simple geometrical facts and constructions, with mensuration of plane figures. Business forms and simple bookkeeping. Throughout the course mental arithmetic should receive careful attention.	

Drawing.

GROUP I. (5-7 years.)

Drawing very simple familiar and nature-forms of beauty and interest. It is well, also, for the child to represent simple colored objects, as apple, lemon, orange, and natural objects at hand, according to the season, in solid color, as he sees them.

Illustrative drawing, by the children, may be frequently introduced as a means of interest; in all these exercises great freedom should be allowed.

Free paper cutting, as exercise in memory of proportions, may be an occasional exercise.

Practice on lines of various kinds as combined in symmetrical and pleasing figures, so conducted as constantly to exercise the invention and taste of the child.

Symmetrical arrangement of forms (tablets, seeds, etc.), by repetition in a line (borders) and around a center (rosettes); by selecting objects of different colors this may be made an exercise in color as well as form; occasional use of ruler in drawing lines and figures.

Color. — The spectrum colors, from the prism, should be taught, and colors in flowers and other objects should be carefully observed.

GROUP II. (7-9 years.)

During this period of two years, from large models, mainly by the visual appearance and not as form studies in the usual sense of that term, study the sphere, cube, cylinder; spheroid, prolate and oblate; square and triangular prism; pyramid, cone, ovoid; comparing with each other and with objects related to them, noting resemblances and differences.

(Some exercise in drawing these, using soft pencil — black, brown, or blue — and shading a little, avoiding pure outline in picturing solids. This work can be postponed to the next group.)

Paper cutting to the line of drawings and construction may be used as elementary manual training.

Draw circle, ellipse, oval, and other good forms with curved outline; draw leaves, fruits, nuts, and familiar objects of beauty and interest; drill on division of lines, bisection, trisection, quadrisection; judgment of length of lines; proportions of lines one to another; proportions of figures; accurate measurement of lines and distances; drawing and estimation of angles of various kinds; cultivate neatness and accuracy in work; symmetrical arrangements of tablets and other forms, as borders, rosettes, and other ornaments, and drawing the same; a part of each lesson should be given to free-arm movements and to exercises in drawing adapted to give freedom and accuracy in drawing outlines, right-lined or curved.

Exercise in picturing in color, with water color, or colored crayon, the various natural objects studied in this group.

Illustrative drawing.

Color.—Spectrum colors, hues, tints, and shades.

Drawing.

GROUP III. (9-11 years.)

Free-hand drawing of plane figures, right-lined or curved in outline; pictures of geometric solids and of natural and artificial objects, choosing objects good in proportion and outline; interest will be increased by drawing groups of objects. Once a week draw from geometric solids and simple objects in light and shade, drawing the shadows very simply. In autumn and spring, especially, study plant growth, and draw sprays of leaves and flowers; draw vegetables and fruits; construction of forms of regular solids by drawing, with instruments, cutting, folding, and pasting paper and cardboard; studies in design from natural plant forms, using colored crayon or water color if possible. Neatness and accuracy required in all work.

Drill as in II. in free-arm movements and in exercises in drawing, practicing especially on circles, spirals, ellipses, ovals, reversed curves; judgment of proportions of lines and figures.

Commence collection and study of pictures.

Color.— Mixing colors; harmony of colors.

GROUP IV. (11-13 years.)

(*a*) Draw pictures of geometric solids and of natural and artificial objects in groups, choosing objects good in proportion and outline, giving special attention to arrangement of groups.

(*b*) Study foreshortening of horizontal and vertical surfaces; draw pictures of rectangular solids in different positions relative to the eye, singly and in groups; draw books, foliage, vases, etc.; draw in light and shade with simple background, using charcoal, pencil, or brush, and paper of size suited to the object; large paper, nine by twelve inches, is desirable for much of this work.

(*a b*) Exercises in drawing shapes of faces of objects — top and front — and working drawings with figured dimension lines, with drawing instruments, using pencil, or pen and ink. (Some of this work may be done in Group III.)

Free-hand drill on curves, shade (or tint) lines, and judgment of proportions; drawing of original designs, using color; practice in use of drawing instruments; graphic solution of simple problems in geometry.

Color.— See Group III. Add complementary colors. Study color in vegetables, flowers, leaves, etc.

NOTE.— In drawing, as in the other subjects of this course, the aim has been to construct a course which will be helpful to teachers in the average rural school under fairly favorable conditions. The order of treatment of subjects in each group, and the amount of work done, must depend upon the conditions; in some cases more can be done than here laid down, in many cases not so much. So far as the child learns to see clearly and to draw truthfully and well what he sees, and as he sees it, good work has been done. He should be encouraged to draw much, aside from his lessons and school exercises, from whatever is of interest to him.

(*See Remarks on Drawing on page 184.*)

	GROUP I. (5-7 years.)	GROUP II. (7-9 years.)
Elements of Science, or Nature Study.	In the work in nature study only so much should be attempted as can be well done. The course in science furnishes an excellent basis for written work. Simple object lessons, if possible with the object under the eye and in the hand of the pupil; conversational lessons on familiar things and on the phenomena of nature, designed to lead him to give attention, to observe, to compare, to question, to remember. Familiar talks on the human body and the care of it; on common animals known to the child, their distinguishing characteristics and habits; on common flowers and plants, especially food plants and plants of use in the arts, as corn, cotton, etc.; on stones and metals in common use which the child can learn to recognize. As early as possible he should have some care of plants in the schoolhouse or the school garden. Correlations, especially with language and drawing, with geography and literature, should be kept in mind. In nature study the development of appreciation of and love for the beautiful should be made prominent.	See Group I. A graduated course of nature study following a systematic order of development, but observing the child's standpoint as determined by his experience and interests, studying things, phenomena, processes, properties, and classification of things, as animal, vegetable, mineral. Conversational lessons on the human body, its principal parts, their movements and their uses; on common animals, so conducted as to arouse interest in animal and bird life, especially treating of the uses of birds to the farmer, and the necessity for their protection, to stimulate observation regarding their habits, and to cultivate a sentiment of kindness in the treatment of them; on plants and the care of them, their parts, as roots, stems, flowers, fruits, seeds, and their growth; on some common minerals and their uses. Lessons on transformations of material in manufactured articles of common use.

GROUP III. (9-11 years.)

Preceding course so expanded and taught as to give clearly some of the more important notions of natural science: the human body and the principal functions of life; distinguishing characteristics of animals taught from the study of types; useful and noxious animals, especially birds and insects; the study, in typical specimens, of the principal organs of the plant; plant growth, its order and conditions; some typical trees, and their characteristics, value and uses of their wood; fruit trees best adapted to the region; lessons on soils.

Every rural school should have a plot of ground prepared as a school garden, in which every pupil may cultivate and study plants. In this case the instruction in Groups III and IV. would be extended to include the preparation of soils for cultivation, the action of fertilizers, the simpler agricultural operations, and the use of garden tools.

GROUP IV. (11-13 years.)

Revision and extension of the course in Group III., giving more of completeness and of scientific arrangement and form to the instruction. Cabinets should be collected for the school.

Physiology. General review by use of a text-book, giving special attention to hygiene and to the effects of stimulants and narcotics. Sanitation of school and home.

Zoölogy. Observation of the habits of animals throughout the year; study of available types; general classifications; geographical distribution.

Botany. Essential parts of the plant; order and conditions of growth; principal groups; geographical distribution of plants; uses of plants; study of trees.

Mineralogy. General treatment of the structure of the crust of the earth; soils, rocks, fossils, with illustrations from the neighborhood.

Excursions and collections by the pupil.

Physics and Chemistry. The elementary facts and principles of these sciences should be taught by simple experiments. The course will vary according to the qualifications of the teacher and the means of instruction. Various courses for this instruction have been prepared, giving methods in detail.

Only such selections from the above as can be well done.

Elements Science, Nature Study.

	GROUP I. (5-7 years.)	GROUP II. (7-9 years.)
Morals and Civics.	Conversations with the children in all the school exercises, in which the teacher shall aim to secure the confidence and familiar participation of the children, and thus to learn their characters so as to guide their tendencies of thought and action. Special care regarding children in whom the teacher notices any moral defect or vicious tendency. Careful attention to propriety of conduct and good manners.	Familiar conversations and kind individual counsel when needed. Simple stories, parables, fables, treated with reference to ideas of right and wrong. (Never make a class lesson from cases involving the conduct of the pupil; these should be treated by private admonition.) Practical exercises tending to arouse the moral sense of the class, by methods of school discipline, by often making the pupil the judge of his own conduct, by training the pupil to draw the appropriate lessons from facts observed by himself.

GROUP III. (9-11 years.)

ntinue course of Group II., somewhat more of method. ersations so conducted as to :st the pupil and induce the : participation. Passages from -y and literature treated from ›oint of view of right and g. All lessons and readings ranged as to omit no impor- ›oint of the following course: s to parents, duties to brothers ;isters, duties toward employ- duties toward servants and oyés, duties of the child in ›l, duties toward the native and society, duties toward self, as cleanliness, temper- economy, self-respect, mod- the Golden Rule; duties rd God, not a course of reli- instruction, but emphasizing :ially two points: cultivating :eling and habit of reverence, a disposition of obedience to ıws of God.

roughout the whole course ıess to animals should be most ully taught.

me work in civics should be ı up in III. as well as IV.

GROUP IV. (11-13 years.)

Morals and Civics.

Instruction along the lines of the preceding course, expanding the instruction especially in regard to social morality and duties to the native land, treating under this last title the organization and principles of our form of government (civics).

As a preparation the teacher should carefully read some systematic treatises on ethics and civics, and the immediate test of success will be the fact that the pupils are heartily interested in the subject.

Morals and civics furnish an excellent basis for training in speaking and writing.

This course in morals, in its general classification and arrangement of topics, is in accordance with the course of moral instruction in the schools of France, and has been tested for several years in a training school in this country.

There is here given a scheme for distribution of time, the numbers representing the lessons per week:

	I.	II.	III.	IV.
Reading,	8	8=16	3	2=5
Language,	4	4= 8	4	4=8
Arithmetic,	8	8=16	2	1=3
Writing,	4	4= 8	2	0=2
Drawing,	3	3= 6	2	2=4
History and Geography,	4	4= 8	4	4=8
Morals,	1	1= 2	1	1=2
Elements of Science,	1	1= 2	2	3=5
Totals in I. and II.,		66	Totals in III. and IV.,	37

Giving to lessons in I. and II. an average of ten minutes each, and to those in III. and IV. an average of twenty minutes each, the total time will be 1,400 minutes for the week. If the daily session be six hours, and one hour per day be given to recesses and general school business, there remains a surplus of 100 minutes per week at the disposal of the teacher, which can be devoted to more instruction wherever needed.

This table is given merely as suggestive of possibilities, and not by any means as an ideal adjustment of ratios. In many schools much more time can justly be given to subjects here left with but little.

In all the work of this course it must be borne in mind that in the average rural school the complete course will never be in working at one time; that there must be much individual instruction; that in every good rural school there must be very much encouragement of the pupil to work by himself under the general guidance and direction of the teacher.

REMARKS ON DRAWING.

Object of the Course.—To develop correct notions of form as it appears and to represent these notions truthfully by drawing, and to cultivate appreciation of beauty of form.

Materials.—Geometrical solids large enough to be seen from any part of the room. These can be found in common objects or made from stiff paper or cardboard and tablets showing geometrical figures. A prism for teaching color; sticks one to five inches long for laying forms; paper for cutting and folding; good drawing pencils, soft and medium in hardness; drawing paper with surface to take pencil well; a good blackboard, and clear, soft crayons, with a few colored crayons; some colored pencils for pupils' use; water colors; some charcoal for more advanced work; an ample supply of common objects, leaves, flowers, fruits, etc., renewed from day to day from the neighborhood.

The statements of this course are necessarily brief and general; it is supposed that teachers will be aided in matters of detail by some of the published courses in drawing.

In teaching drawing as a truthful representation of the visual appearance of form there is not necessarily the strict sequence in the use of geometric models which there would be in a course of form lessons. For lessons in representation of the facts of forms as a basis for construction in connection with working drawings, see Group IV.

Some prefer in the early stages to drill only on planes and lines, postponing solids to a later period. In the French course in drawing the solid does not appear before our Group III., and then at first the drawing is a carefully graded course from low relief.

Those who prefer to work at first entirely from nature can select in order such exercises as are in accordance with this theory and mass the technique in the later stages of the course.

Historic ornament is left to the discretion of the teacher, as in most cases limitations *of time would* exclude it from the rural school. Teachers should themselves gain such

knowledge of historic ornament and of the history of art as is possible. Excellent books treating of these subjects can be easily obtained, and the knowledge thus gained will enable them to add much of interest and value to their instruction.

For the complete treatment of this course it is desirable that the teacher should have had some special preparation for teaching drawing. In the rural school selections will often have to be made according to circumstances and the ability of the teacher. There should be at least three lessons a week, of twenty minutes each, in Groups I. and II., and longer lessons in Groups III. and IV. Exercises included in parentheses are left to the discretion of the teacher.

In all parts of the course in drawing care should be taken to cultivate an appreciation of the simple elements of beauty, and to develop a love for the beauties of nature and art; and the schoolroom should be furnished with some classic examples of art for study as well as for ornament. In this regard note the analogy between the study of art and the study of literature.

APPENDIX J.

NEGRO TEACHERS FOR NEGRO SCHOOLS.

The answer to the question "Should white teachers be employed in negro schools?" requires some knowledge of the past conditions of the negro, as well as an intelligent and sympathetic appreciation of his present status. I propose then to consider the question in the light of certain broad, fundamental principles which involve, essentially, the welfare and progress of the negro race.

Thirty years have passed since the emancipation of the negro became an accomplished fact. For thirty years he has been the subject of much contention and the object of much solicitude. During this period new nations have been born to civilization. Japan, for instance, whose birth was almost coincident with negro emancipation, has established herself "Queen of the Orient," and has demonstrated her right to a place of honor among the great nations of the earth. While much progress has been made by the negro race in the South, it must be admitted that this progress has been due too little to himself, and too largely to the external influences of the civilization under which he has lived. While marvelous development may be found in individual instances, the condition of the masses of the race is but little improved; the solution of the vexed negro question is as problematical as ever; the education of the race is still in an empirical stage. Unlike other races that have attained to civilization, the negro, with a few individual exceptions, has been content to be merely a passive spectator of the processes that have affected him. Incapable of initiative and executive power, and wanting in genius for organization, he has never been an active agent in the work of race redemption. He has never been accustomed to voluntary activity; he is here not of his own choice; a docile slave, he wrought on southern plantations until, without an effort of his own, he was made an American citizen. Having received his political elevation by legislation, he naturally expected to obtain a commercial, intellectual, and moral status in some such mysterious way. The progress of the negro race, remarkable though it may be, is not the result of social and political self-evolution, but an effect produced by extraneous causes.

If the education of the negro is to be anything more than a veneer, the race must obey that great law of human development which makes voluntary energy the source of power and progress. The intellectual power developed must be energized by proper incentives into *self-activity; it must be* made reproductive within the race itself. It is not enough *that the race shall be* environed with all the accessories of civilization. Its consciousness

must be aroused, its powers energized, its sense of responsibility quickened. It must be taught to work out its own salvation, if its progress is to be real and enduring. The gospel must be preached by its own preachers; its schools must be taught by its own teachers. It must consciously realize its own responsibility for the effective use of the means at its command in the work of race development.

The position of the negro as a race has heretofore been one of dependence. Lacking the virtues of thrift, foresight, and economy, he is still very largely supplied from the white man's table; and in time of trouble, confidently appeals, and seldom in vain, to his former master for aid and relief. The negro wears his master's religion, and sometimes his politics, very much as he does his old clothes, as something entirely foreign and external to himself. By perpetuating this dependence, intellectual and moral, we acquiesce in a species of spiritual bondage that is almost as unfavorable to race progress as slavery itself. "Our real friends," says Emerson, "are those who make us do what we can." Judicious aid to a dependent people is necessary and praiseworthy, but, in my judgment, it should stop short of doing all their intellectual work for them.

To cultivate in the negro the sense of intellectual and moral independence, such avenues of service as will enable him to effect the uplifting of the race should not be closed against him. He requires these as worthy incentives to arouse his ambition and to stimulate his sense of responsibility. To be the teacher of his race is the one position of honor, dignity, and responsibility to which he may legitimately aspire. To throttle his energies and to close against him this avenue of activity and usefulness would be an unwarranted assumption of responsibility by the white race and an injustice to the negro.

But a further and more potent reason for employing negro teachers to teach negro schools is the fact that race identity is an important factor in educational work. The teacher and the taught must possess a common consciousness, a mutual affinity, as a condition of proper intellectual and moral growth. The teacher must embody in his personality the historic race epochs and processes of development represented in the pupil, in order that the intellectual powers of the child may be invested with that atmosphere of sympathy and appreciation necessary to their healthy activity. The historic consciousness of teacher and pupil must possess certain intuitive elements in common, as the result of common race processes, if the teaching is to be efficient and the development natural.

Again, it is a fact that cannot well be called in question that white teachers in negro schools can never realize, even approximately, the ideal relation that should exist between teacher and pupil. This is forcibly true in elementary schools. That relation requires love, not philanthropy; affection, not charity; sympathy, not pity. Occupying planes so widely separated, spheres of activity so diverse; without common blood or social ties, common history or common interests, common origin or common destiny, a white teacher and a negro class will never realize the ideal school. In such a case the teacher cannot appeal to the inner life of the pupil, and the craving consciousness of the child finds no responsive chord in the teacher. They must meet, if they meet at all, upon the cold, abstract plane of reason. The instinct of race identity, as strong in one race as in the other, as strong in the pupil as in the teacher, intervenes as an insuperable barrier. Between teacher and pupil must ever remain this chasm of race difference, as deep as human consciousness itself. Call it prejudice if you will, but it exists as a God-implanted instinct of which the teacher can never divest himself — out of which the pupil can never be educated. Although it be tempered by philanthropy, sweetened by religion, or even smothered by fanaticism, it still exists, and will continue to exist as long as humanity.

The principles here emphasized are not restricted in their application to the negro race; like all natural laws they are universal, and are modified in their operation only by the variation of the conditions involved. They are true in their application to the American Indian and to the Mongolian, to the Fiji Islanders and to the Kaffirs of South Africa.

Experience in the missionary field has demonstrated the fact that the successful

propagation of the gospel requires the preparation of native teachers and native preachers as a primary condition. The foreign missionary may direct and supervise, aid and inspire, but he remains a foreigner still — a being apart and something different from the people. The native teachers and preachers of our missionary fields are the hope of heathendom, because they alone can fulfill the requirements of the law of race identity.

Nor is this principle confined to race relations; in a lesser degree it operates between different families of the Caucasian race, and indeed between any two people differing in nationality and language. School men of wide experience will testify to the fact that few teachers of English or American birth can successfully manage a school of Irish, German, or Swedish children; on the other hand, a native French or German teacher, be he ever so proficient in scholarship, or fertile in resources, finds much difficulty in the discipline of American children, and years of striving are usually required to bridge the chasm of difference.

In elementary and secondary education I regard this law of race identity as vital and imperative, but in the province of higher education its authority, under certain conditions, may possibly be relaxed without serious consequences. Institute instruction, however, and the guidance and supervision of negro teachers by the whites must still be continued as a matter of duty and as an administrative necessity.

The important principle involved here is primarily that of co-ordination — not of text-books and curricula — but the vital co-ordination of the teacher with the child. When we impose upon the child a relation so incongruous, physically, intellectually, and morally, we violate a primary law of nature as well as an established pedagogical principle. The fact that the vast majority of negro teachers are deplorably incompetent no one will deny. But the remedy is to be sought in the improvement of these teachers, and not in the substitution of white teachers. Novel as the statement may appear, I confidently hold that no white teacher is competent to teach negro children. We must remember that for the teacher there are conditions and qualifications antecedent to scholarship, and tests more important than the uniform state examination.

Other considerations in the same line might be adduced, such as the necessity for modifying our courses of study and adapting our methods of teaching to the wants of negro schools. It remains to be seen whether the instruction of an infant race can proceed along the same lines and by the same methods as that of a race whose culture is based upon centuries of struggle and self-effort, without involving the violation of all sound economic and pedagogic doctrine. But the consideration of these lines would carry me beyond the limits and the object of this discussion.

In conclusion let me briefly summarize the argument for employing negro teachers in negro schools:

1. The educational development of the negro must be from within, and by the race itself, and not solely through extraneous agencies.

2. The intellectual and moral dependence of the race should not be perpetuated. The negro needs to be stimulated to independent activity.

3. As a teacher of his race the negro occupies a position of trust and honor, which he needs to quicken his sense of responsibility, and to furnish him the incentives and the means for race elevation.

4. The teacher and the pupil must possess a common consciousness, whose historic processes have common elements, resulting in common intuitions. The teacher must embody in his character the race epochs and processes represented in the child.

5. The instinct of race identity renders impossible the realization of an ideal relation between the white teacher and the negro pupil. The teacher and the child must be co-ordinated.

J. H. PHILLIPS.

Birmingham, Ala.

APPENDIX K.

J. W. BRADBURY.

Hon. J. W. Bradbury, United States Senator from Maine 1847–53, was a teacher for ten years, commencing at the age of seventeen. He had among his pupils Hawthorne, Longfellow, Abbott, Cheever, Cilley.

He had completed his studies for admission to the bar in 1829, but it would be some months before the court could make provision for his examination.

He had learned in visiting schools that teachers were ignorant of proper methods of instruction, and, hoping to assist them to some definite ideas of what studies should be taught in the common school, the order in which they should be taken, and the methods which should be used in teaching them, he gave notice in August, 1829, that a training school for teachers would be opened in Effingham, N. H. The school was in session during September, October, and November. About sixty teachers were in attendance. Instruction was given in the subjects taught in the public schools and in the methods that should be used in teaching them, and the ability of his pupils to comprehend the instruction in methods was tested by *requiring them to teach the subject to the class under his criticism.*

At this time he had not heard of the existence of such a training school in this country.

In the winter of 1829–30 Mr. Bradbury was a member of the school committee of Parsonsfield, Me. The methods which he had taught in his Effingham training school were adopted in Parsonsfield. By improved methods of examination of teachers better teachers were secured, the quantity and quality of work done in school were raised, and the schools of Parsonsfield were placed on a higher plane. It is some evidence of the character of this movement that more than 600 women have gone out from this small country town and become good teachers.

TEACHERS' SEMINARY AT PLYMOUTH, N. H.

[Extracts from catalogue, 1839, in which year the school was closed from failure in appropriation.]

"This seminary has been founded with the hope of improving popular education, by elevating the character of teachers. . . . . The trustees have three prominent objects in view: (1) to educate teachers for common and other schools; (2) to fit students for college; (3) to furnish the means for a thorough English education. . . . .

"The school embraces a department for males and one for females. . . . . The course of study in the Teachers' Seminary requires four years in the male department and three in the female department, with the exception of one term each year, during which the members may be absent to teach school."

In the course of study were taken English language, history of the United States and of England, physics and chemistry, with experimental lectures; mathematics, including trigonometry and conic sections; political economy, intellectual and moral philosophy, logic, natural theology, lectures on the history of education and the art of teaching, in addition to the common-school studies.

Studies were suspended in the winter terms of the last three years of the course in the *male department* to allow students to teach, and in the summer terms of the same years in *the female department* for the same purpose.

Although the students in the classical department far outnumbered those in the teachers' department — eighty-seven to twenty-eight — yet all the statements show that the teachers' department was the leading one in the interest of the principal, and scholarships, of which there were several, were founded only in this department.

APPENDIX L.

NEW YORK STATE SCHOOL LIBRARY.

The New York legislature of 1895, in an act entitled "An Act for the Encouragement of Common Schools and Public Libraries," authorized the State Superintendent of Public Instruction to establish a state school library for the benefit and free use of the teachers of the state. . . . . The books selected embrace those bearing directly on the profession of teaching, with others relating to studies in psychology and the training of children, together with those referring to special studies in school. Particular attention has been given to the selection of works on civil government, political economy, and social and moral questions, as discussed by teachers with the children. Volumes on the natural sciences have been provided for popular use rather than for technical or professional reading. Care has been taken to provide, to a limited extent, books relating to history, general literature, and art.

Any teacher may have the use of the books of this library free of expense, except for postage and express, and he may purchase books from the list at a fixed price. (From Report of State Superintendent of Public Instruction, New York, 1896.)

LIST OF BOOKS FOR RURAL SCHOOLS AND COMMUNITIES.

The committee has endeavored to make out a list of books for study and reading for parents, teachers, and pupils in the country schools. It wishes to acknowledge the assistance of President F. W. Parker, of Professor L. H. Bailey, of Cornell University; Professor F. H. King, University of Wisconsin, and Professor D. L. Kiehle, of Minnesota.

Colonel Parker makes this suggestion: "The mere reading or study of these books, without copious illustrations direct from nature, would be like reading any other books without experience back of them. My suggestion is this: that the books be read in connection with the study of nature. The teachers can easily make the right selections; for instance, the study of soils in the time of plowing, the study of plants in the time of growth, etc. Specimens may be brought into the schoolroom, or better, the pupils may go to the specimens by field excursions.

"I am quite sure there are many other books, but I have not had sufficient time to get hold of them.

"I wish to call the attention of the teachers to a fact that should be well known, that the United States government publishes some of the best books on farming and nature known. I have appended a very brief list here, but the trustees of schools and principals of schools can very easily get all of these valuable documents from their representative in Congress."

AGRICULTURE.

The Soil, Franklin H. King (Rural Science Ser.). The Macmillan Co. Reading and study for school and home; excellent for study of upper grades, and farmers meetings.

The Fertility of the Land, J. P. Roberts. The Macmillan Co. Reading and study for home and school. Excellent.

First Principles of Agriculture, Edward B. Voorhees. Silver, Burdett & Co. Reference.

Irrigation Farming, Lute Wilcox. Orange Judd Co. Reference.

Farm Drainage, C. G. Elliot. United States Department of Agriculture (Farmers' Bulletin No. 40). Reference.

Tillage and Implements, W. J. Malden. G. Bell & Sons. Reference.

Our Farming, T. B. Terry. The Farmer Co., Philadelphia. Reference.

Yearbook of the United States Department of Agriculture. Reference.

Farmers' Bulletins, United States Department of Agriculture. Reference.

Relation of Soil to Climate, E. W. Hilgard. Bulletin No. 3, United States Weather Bureau Department.

Some Physical Properties of Soil in their Relation to Moisture and Crop Distribution, Milton W. Whitney. Bulletin No. 4, United States Weather Bureau Department.

Fluctuations of Ground Water, Franklin H. King. Bulletin No. 5, United States Weather Bureau Department.

Laws of Rainfall, Gustavus Hinrichs. United States Department of Agriculture.

Forest Influence upon Climate, Water Supply, and Health, B. E. Fernow. Bulletin No. 7, Division of Forestry.

HORTICULTURE.

The Principles of Fruit-Growing, L. H. Bailey. The Macmillan Co. Reading and study for home and school.

American Fruit Culturist, J. J. Thomas. Orange Judd Co. Reference.

Landscape Gardening, Edward Kemp. Orange Judd Co. Reference.

How to Make the Garden Pay, T. Greiner. Orange Judd Co. Reference.

Principles of Plant Culture, E. S. Goff, Madison, Wis. Reference.

Plant-Breeding, L. H. Bailey. The Macmillan Co. Reference.

Nursery-Book, L. H. Bailey (Garden Craft Ser.). The Macmillan Co. Reference.

Horticulturist's Rule-Book, L. H. Bailey. The Macmillan Co. Reference.

BOTANY.

How Crops Grow, S. W. Johnson. Orange Judd Co. Reference.

How Crops Feed, S. W. Johnson. Orange Judd Co. Reference.

Familiar Trees and their Leaves, F. S. Mathews. D. Appleton & Co.

Familiar Flowers of Field and Garden, F. S. Mathews. D. Appleton & Co. Excellent for reference. May be profitably studied with the flowers and plants throughout the year.

The Garden's Story, G. H. Ellwanger. D. Appleton & Co. Reference.

How Plants Grow, Gray. American Book Co. Reference.

Botany for Public Schools, Abbie G. Hall. Geo. Sherwood & Co. Reference.

Botany for Young People, Gray. American Book Co. To be read with specimens by intermediate grades.

From Seed to Leaf, J. H. Newell. Ginn & Co. Reader.

Talks Afield, L. H. Bailey. Houghton, Mifflin & Co. For teachers. Good for field excursions.

Chapters on Plant Life, S. B. Herrick. Harper & Bros. To be studied with specimens and microscope by intermediate grades.

How to Know the Wild Flowers, Mrs. Wm. S. Dana. Chas. Scribner's Sons.

Plants and their Children, Mrs. Wm. S. Dana. American BookCo.

SCIENCE.

Sunshine, Amy Johnson. The Macmillan Co. Reading book for grammar grades.

Forms of Water, Tyndall. D. Appleton & Co. Eighth grade.

Weather, Ralph Abercromby. D. Appleton & Co.

Natural History of Selborne, Gilbert White. Ginn & Co. Eighth grade.

The Great World's Farm, Selina Gaye. The Macmillan Co. Charming, and very rofitable for grammar grades and home study.

Elementary Meteorology, W. M. Davis. Ginn & Co. Teachers and parents, and or reference.

A Popular Treatise on the Winds, W. Ferrel. John Wiley & Sons. Teachers' study nd reference.

Elementary Text-Book of Physical Geography, R. S. Tarr. The Macmillan Co xcellent for study and reference.

The Geological Story Briefly Told, J. D. Dana. American Book Co. Excellent for ading and reference.

First Book in Geology, N. S. Shaler. D. C. Heath & Co. Unexcelled reading book r seventh and eighth grades.

The Story of the Hills, H. N. Hutchinson. The Macmillan Co. Reading book for ghth grade.

Monographs on Physical Geography. American Book Co. Excellent for teachers' udy.

Round the Year, L. C. Miall. The Macmillan Co. Teachers.

Autumn, Winter, Spring. Three small volumes. Ginn & Co. Reading for third nd fourth grades.

Science Readers, Vincent T. Murche. The Macmillan Co.

Systematic Science Teaching, E. G. Howe. D. Appleton & Co.

ANIMAL LIFE.

Honey Bee, L. L. Langstroth. J. B. Lippincott Co. A practical treatise. Reference.

Manual for the Study of Insects, J. H. Comstock. Comstock Publishing Co., Ithaca, . Y. Reference.

Half Hours with Insects, A. S. Packard. Estes & Lauriatt. Reference.

Buz; or the Life and Adventures of a Honey Bee, Maurice Noel. Henry Holt & Co. eading, eighth grade.

Boys and Girls in Biology, S. H. Stevenson. D. Appleton & Co.

Ants, Bees, and Wasps, Lubbock. D. Appleton & Co. Reference.

The Population of an Old Pear Tree, E. van Bruyssel. The Macmillan Co. Gram- ar grades.

My Saturday Bird Class, Olive Thorne Miller. D. C. Heath & Co. Fourth grade.

Little Brothers of the Air, Olive Thorne Miller. Houghton, Mifflin & Co.

In Bird Land, L. S. Keyser. A. C. McClurg & Co.

Tenants of an Old Farm, H. C. McCook. Fords, Howard & Hulbert. Habits of nsects.

Domesticated Animals, N. S. Shaler. A. C. McClurg & Co.

Life Histories of American Insects, Clarence M. Weed. The Macmillan Co. ntertaining and instructive.

NATURE STUDY.

Nature Study and Related Subjects, Wilbur S. Jackman, Chicago Normal School.

Tommy-Anne and the Three Hearts, Mabel Osgood Wright. The Macmillan Co. *a good reading book for intermediate grades.*

The Beauties of Nature, Lubbock. The Macmillan Co. Home reading.
Man and Nature, G. P. Marsh. Chas. Scribner's Sons. Reference and reading.
Forest Trees, Wild Apples, and Sounds, H. D. Thoreau. Houghton, Mifflin & Co.
John Burroughs' Works. Houghton, Mifflin & Co.

Winter Sunshine. Parents and teachers. For pupils, The Apple.
Riverby. Parents and teachers. Selections for home reading.
Wake-Robin. Parents and teachers. Selections for older pupils.
Pepacton. Parents and teachers. Selections for pupils: Springs, Idyl of the Honey-Bee, etc.
Locusts and Wild Honey. Home reading. Selections for pupils: Sharp Eyes, Strawberries, Is it Going to Rain, Bed of Boughs, etc.
Signs and Seasons. Home reading. Selections for pupils: The Tragedies of the Nests, A River View, Bird Enemies, Phases of Farm Life.
Birds and Poets. Home reading.

Bass's Nature Stories for Young Readers. D. C. Heath & Co. Excellent for third and fourth grades.

MISCELLANEOUS.

Art of Beautifying Suburban Home Grounds, F. J. Scott. D. Appleton & Co.
A Text-Book on Roads and Pavements, F. P. Spalding. John Wiley & Sons.
United States Government Reports.
Water and Land, Jacob Abbott. Harper & Bros.
What Darwin saw in his voyage round world in Ship "Beagle." Harper & Bros.
Brooks and Brook Basins, Alex. Frye. Ginn & Co.
The Story of a Stone, in Science Sketches, David Starr Jordan. A. C. McClurg & Co
The Earth and its Story, Angelo Heilprin. Silver, Burdett & Co.
Formation of Vegetable Mold, Darwin. D. Appleton & Co.
Science Primer of Physical Geography, A. Geikie. American Book Co.
Up and Down Brooks, Mary E. Bamford. Houghton, Mifflin & Co.
Every-Day Occupations, H. W. Clifford. Boston School Supply Co.
Modern Industries and Commerce, Robt. Lewis. Boston School Supply Co.
Camps in Rockies, Wm. Grohman. Chas. Scribner's Sons.
Coal and Coal Mines, H. K. Greene. Houghton, Mifflin & Co.
The Sea and its Wonders, Mary and Elizabeth Kirby. T. Nelson & Sons.
Canoemates, Kirk Munroe. Harper & Bros.
Campmates, Kirk Munroe. Harper & Bros.
Talking Leaves, W. O. Stoddard. Harper & Bros.
An Iceland Fisherman, Pierre Loti. A. C. McClurg & Co.
Hunter Cats of Connorloa, H. H. Roberts Bros.
John Brent, Theo. Winthrop. Henry Holt & Co.
The Electrical Boy, J. T. Trowbridge. Roberts Bros.
How to Study Geography, F. W. Parker. D. Appleton & Co.
Methods and Aids in Geography, C. F. King. Lee & Shepard.
The Story of the Plants, Grant Allen. D. Appleton & Co.
Wonders of Plant Life, S. B. Herrick. G. P. Putnam's Sons.
Intelligence of Animals, Ernest Menault. Chas. Scribner's Sons.
Elementary Meteorology, F. Waldo. American Book Co.
The Food of Plants, A. P. Laurie. The Macmillan Co.
Agriculture, R. H. Wallace. J. B. Lippincott Co.
Garden Craft Series. The Macmillan Co.
Rural Science Series. The Macmillan Co.
The Story of our Continent, N. S. Shaler. Ginn & Co.

Glimpses at the Plant World, F. D. Bergen. Ginn & Co.
Animal Memoirs, Parts I.–II., S. Lockwood. American Book Co.
The Survival of the Unlike, L. H. Bailey (Garden Craft Ser.). The Macmillan Co
Elements of Geology, LeConte. D. Appleton & Co.
Town Geology, C. Kingsley. The Macmillan Co.

APPENDIX M.

HYGIENE AND HEALTH IN PUBLIC SCHOOLS.

Dr. G. Stanley Hall has said: "What shall it profit a man if he gain the whole wo of knowledge and lose his health?" In our public schools, especially in the high scho many a promising young life has been sacrificed by over-study. The system of ma and medals, now happily disappearing from many of our best schools, has driven ma an ambitious boy and girl to an early grave at the point of a pencil, because that syst stimulates those very pupils who need no spur and whom the spur injures. More f quently the health of pupils is injured by ignorance of the most obvious laws of heal or by criminal neglect of those laws, and by the impure air of schoolrooms. Unsuita furniture which cramps and distorts the growing bodies of children, and poor light wh impairs the sight, have also a long account to settle with children thus ruined for li

The evils of unsanitary schoolhouses have attracted most attention in the crowd schoolrooms of cities, but these evils are not confined to densely populated places. Th appear equally in the rural districts, and they are less known only because the cases injury are scattered, and the statistics are less easily obtained.

The vigorous country boy and girl may for a time resist the evils of a schoolroo alternately too hot and too cold; of drafts of cold air in winter through cracks in the fl and poorly-built walls; of outhouses too filthy for use and sources of moral defilement; seats and desks, built for cheapness and not for comfort, and more racks for torture th like a proper resting place for the growing bodies of little boys and girls. But howe much the injury may be concealed, the deadly work goes on in many a country scho Take a single instance. Many a man has suffered for years from hemorrhoids brou on by ignorance or neglect in childhood; neglect, because proper accommodations w not provided or not properly cared for at the schoolhouse; ignorance, because the sch gave no instructions in hygiene—not the technical hygiene suitable for physicians, l the obvious, ordinary hygiene that relates to clothing, proper bathing, eating, and excretions.

Physiology is now required by law to be taught in the schools of nearly all the stat As too frequently taught, it concerns itself about the chemical effects of certain substan upon various parts or processes of the body. Such a treatment of the subject is abstruse for children in the schools, it goes beyond their knowledge and their experien They need to be taught the effect of green apples upon the stomach before they taught the effect of alcohol upon the brain. We ought to learn wisdom from the concr teaching of nature about eating green apples in her monitory pains. People mean w when they teach the evil effect of alcohol to little boys and girls who do not know wl alcohol is. It would be better to teach these children the good effect of wholesome fo and drink, and especially to teach them that the whole alimentary canal should be kept healthy, regular, and daily movement throughout, and to teach this and all that relates the necessary bodily functions with delicacy and propriety, and without any squeami ness. Is any teacher too delicate, cultured, and refined a lady or gentleman to give t instruction concerning the bodies of the children? Then let them be relegated to

land of spirits, to teach where the mortal coil has been shuffled off. It is high time to inaugurate a campaign of hygiene, and not the least important branch of child study is the study of their bodies, and how those bodies may be made in school to grow strong, robust, healthy, natural, at ease — "the temple of the living God."

In making the many advancements in education in recent years the pedagogical literature of the past three hundred years or more has been ransacked, and the educational philosophy of many eminent and venerable teachers has been exploited to constitute the new education—Comenius, Pestalozzi, Froebel, Herbart, and the rest; it is worth while now to bring to the front the maxim, "Mens sana in corpore sano," and to found an educational philosophy on that. Already we have physiological psychology which seeks to trace mental phenomena through a study of the brain, and missionaries are now learning to convert the heathen by making their bodies comfortable without their eating the missionary. Benevolence now seeks to raise humanity, both intellectually and morally, by first improving men physically. Let the schools follow the lead of philosophy and of religion in this regard.

It is well known that no child can learn well or grow mentally when in bodily discomfort. Dullness, uneasiness, and consequent disorder in a school, are directly traceable to vitiated air. If the body is numb with cold, if the feet are damp and chilled, the mind becomes stupid; and the sweltering heat of a badly ventilated schoolroom, the uneasiness of an over-loaded stomach, of constipation, and of uncomfortable clothing, will produce the same result. Moreover, an abnormal condition of the body is often the source of immorality. We blame the first Adam too much; the real Adam is nearer home, and of this generation and every generation that neglects the laws of health. The outbuildings of ill-governed schools with ill-taught children sometimes give evidence of fearful demoralization, and the demoralization is contagious, like a plague.

An important part of school hygiene, then, relates to the lavatories or water-closets. This is not the only, nor perhaps the most important, part of school hygiene, but it needs emphasis most at present, because it is nearly always neglected. In rural districts the outhouse is generally located in a remote part of the grounds, where its offensiveness may not interfere with the school, and it is the prey of tramps and bad boys who delight in defiling it. The closet should adjoin the schoolhouse, and be accessible through the house only. This location would compel its being kept inoffensive, and make it easy to do so. It should then be used by every child with the same freedom as at home in a well-regulated family. And the child should be taught in school to respect his body in every part and in all its functions — that nothing about it is defiling unless he himself makes it so; and that, while we are animals, we should be rational animals, and not brutes. Such teaching should not be indelicate nor obtrusive; but it is important, because respect for the body is at the foundation of self-respect and true manliness. This special teaching of hygiene has often been neglected through a false modesty which is highly indelicate, and which is itself the evidence of an impure mind.

For health, for comfort, and for intellectual and moral well-being, the schoolhouse should be well-constructed and suited to its use. It should stand in the middle of the grounds, high, well-drained, and ornamented with trees and shrubs. The well should be so located as to supply pure water. The architecture should be simple and show a refined taste, for the schoolhouse is an educator. It should be as convenient and as well-built as the best homes, in order that the children of the well-to-do may not despise it, and in order that the children of the poor may see how the best people live. The schoolhouse will thus become an inspirer in the young to higher living, for education is more than learning from books. It is a training also in how to live.

Churches are built as an example of noble architecture, to be an object lesson *leading upward* to a higher life. They are usually grander than the houses of the wor-

shipers, and the poorest man in the congregation has an ownership in them. Municipal and state buildings often display, or are meant to display, the community's ideal of a home for itself. And so the schoolhouse should exhibit the taste and to some extent the aspiration of the neighborhood. It should be a little better than the best dwelling house.

Below is an attempt to show the least that should be tolerated in any community where the Americans of the future are to be educated. The ideal room may be repeated in a single building to any number below sixteen or twenty.

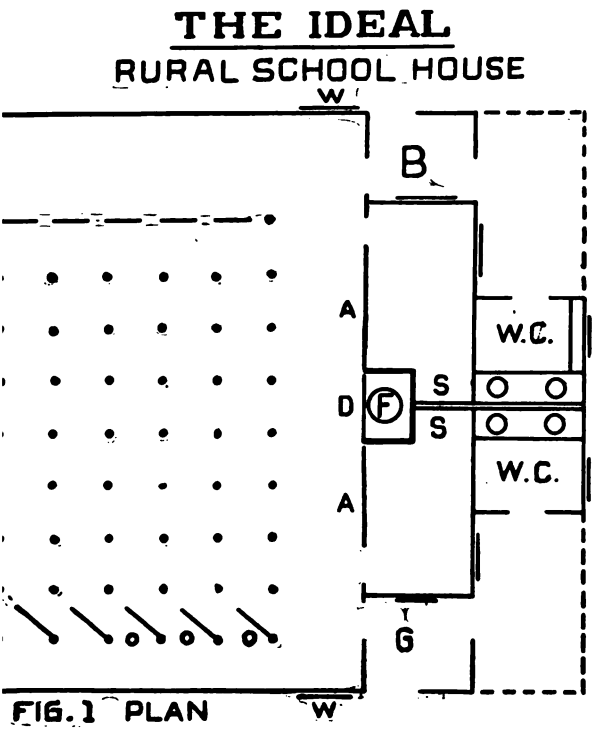

FIG. 1 PLAN

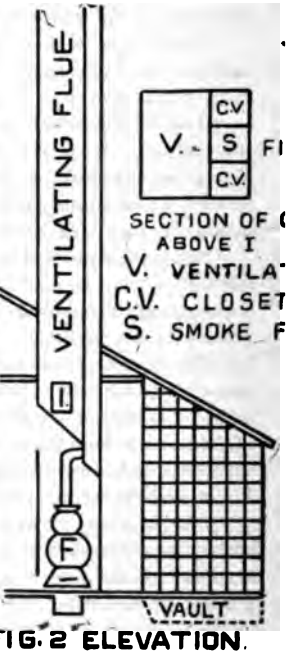

FIG. 2 ELEVATION.

This plan provides for forty-eight pupils — one desk and chair in each of the squares, 3 ft. by 3 ft., indicated by the dots. The desks at the front are at right angles to the wall, and each succeeding desk toward the back is at a greater angle than the last, till about 45 degrees is reached at the last. The teacher's desk is at T in the left front. The surface of the floor is 720 sq. ft., or 15 sq. ft. each for forty-eight pupils, which is the least allowable. If the room is 13½ ft. high its contents are 9,720 cu. ft., or 200 cu. ft. each (the regulation number), and only 120 cu. ft. for the teacher when all the pupils are present.

Fig. 1. This represents a schoolroom 24 ft. by 30 ft., with (B) boys' entry and (G) girls' entry. The entire south side has a series of windows as near each other as the construction will permit, and extending to within three or four feet of the corners of the room. These windows should be three or four feet from the floor, and they should extend entirely to the ceiling of the room. Only the two outer ones need to be built so as to open. In cold climates all the windows should be double.

Near the entry door, both on the boys' and on the girls' side, another door leads into

the cloakroom, which is 11 ft. by 6 ft. in size, and each cloakroom is provided with a sink (S) and two windows, five feet from the floor, one looking into the entry opposite a corresponding one above the outside door, and the other looking into the back piazza. The last of these windows must be stationary, the one looking into the entry may be open in summer, but never in winter, for a reason that will appear later.

From the entry on each side of the house another door opens backward upon a piazza accessible in no other way, and enclosed with heavy lattice-work (shown in Fig. 2) or stout wire screens, and from this piazza a door leads into the closet, which is provided with a single window protected by heavy screens.

Each vault must be built as nearly air-tight as possible (preferably of brick), must be connected closely with the under side of the floors, and must have a ventilating pipe of galvanized iron leading from the end of the seat at the top and entering a separate flue in the chimney next to the smoke flue, as seen in Fig. 2.

The furnace, F (Fig. 1 and Fig. 2), has a large stove, with 10-inch fire-pot (if for coal) enclosed in a brick chamber, some 3 ft. by 3 ft., from which a door opens into the schoolroom. This door is six or seven feet high and three feet wide, and is very carefully protected on the inside with tin, or better, it may be made of tin or sheet-iron. Above this door is a transom, three feet wide and two feet high, either open entirely or filled with a screen of light wire and large mesh, and from the top of this transom and within the chamber or furnace a sheet-iron partition or diaphragm slopes backward, at an angle of about 45 degrees, to back side of the furnace.

Below the stove and in the bottom of the furnace is an opening 2 ft. by 2 ft. connecting with a fresh-air duct of the same size that extends beneath the floor to the outer walls beneath the outside steps, where it must be covered with a wire screen and be protected from the dust.

The tin door of the furnace being closed and the stove heated, the air becomes rarefied, rises to the top, is deflected by the slanting partition or diaphragm, and enters the schoolroom through the transom. At the same time the fresh air is supplied to the bottom of the furnace through the duct described above. This duct should be supplied with a valve by which it may be closed if necessary. The smoke flue of the stove is shown in Fig. 2, and behind it is the flue for ventilating the vaults.

But the warm air will not enter the room unless a corresponding volume of air is withdrawn at the same time; and this exhaust should be from near the floor, and on the same side of the room on which the fresh air enters near the top of the room. For the purpose of exhausting the vitiated air of the schoolroom, the furnace flue is extended upward through the roof; and it should be contracted near the top. This flue is represented in Fig. 2 (the large flue); and it will be heated by both the smoke flue on one side of it (which may be of metal) and by the diaphragm or slanting partition at the bottom. This diaphragm will be heated by the hot air impinging against its under side.

The vitiated air from the schoolroom reaches this ventilating flue as follows: The partition between the schoolroom and the cloakroom is raised 2 inches or 3 inches from the floor; on each side of the flue and above the diaphragm there is an opening of 18 inches by 24 inches, through which the air is exhausted from the top of each cloakroom, and as the doors and windows of this room are always closed (as said above) in cold weather, the vitiated air is withdrawn from the schoolroom into the cloakroom, where the clothing is thus warmed and ventilated.

In order to secure warmth and perfect ventilation, it will be perceived that the floor of the schoolroom and the cloakrooms must be perfectly tight, and the walls should be lined with brick, or otherwise made tight, at least three feet from the floor, and all the entry doors must shut very close. In other words, good construction is indispensable to comfort — both warmth and ventilation. It is for this reason that double windows are requi-

site in cold climates. All the warm air within which strikes the cold glass of a window is at once chilled, falls to the floor, and creates a draft. Moreover, the best-lighted part of the room is close to the window; and the first row of seats may be placed near the windows, as shown in Fig. 1, if the window is double.

At night and before the children arrive in the morning the cold air duct and the ventilating flues (I) leading from the cloakrooms may be closed. In that case, the door (D) of the furnace being open, the air within the schoolroom will come into direct contact with the stove, rise through the transom, and thus rotate throughout the schoolroom and warm all parts of it; and children may one by one warm their feet at the stove. But when the room is filled with children, the door (D) would be closed, and the fresh-air duct and the ventilating flues (I) must be open, in order that the stove may constantly heat the fresh air and ventilate as well as warm the room.

In summer the diaphragm above the furnace may be raised to a vertical position; if then the door (D) be closed, the warm air of the schoolroom may pass upward through the transom and the ventilating flue, while the fresh air is supplied through the entry doors and windows, at W W (for this purpose and not for light), and through the two windows that may be raised in the front. In mild weather or on damp days a fire in the enclosed stove will help to produce the upward draft without heating the room.

A pailful of dry earth must be thrown into each vault every day, and the contents of the vault must be removed every week. This can be done by sliding outward a water-tight trough made for the purpose and fitted into each vault. These troughs should then be replaced, and each door through which the trough is drawn should be securely locked.

The house should have a dry, clean, and warm cellar; but where this cannot be afforded the house should stand on a sufficient number of posts two or three feet high and boarded around to the ground. These posts, and especially the foundation of the chimney and of the vaults, must be absolutely secure from frost, and the floors might be boarded below the joists and plastered between; and there must be felt or thick layers of paper between the floors. A cold floor is costly and dangerous; and the cold schoolhouse costs more in the end, in health and in fuel, than it costs to build a tight, warm house at first.

As to the light. The best light for the pupil comes from the left, with no cross lights; but if the whole left side of the room is one continuous window, then the pupils in the back part of the room will face the light, though the window is at the left. To obviate this difficulty the first rows of desks might be placed with the axis at right angles to the window. After the first two rows, each desk is placed with its axis at a greater angle than the last, till the last row is at an angle of 45 degrees. Such an arrangement is novel, but upon reflection there seems to be no necessity for the prevailing rectangular placement of school desks, with the teacher at the middle front. In this plan the teacher is at the left front of the pupils at T, and the oblique situation of the desks is shown. This position requires chairs and not shelves for seats — the only rational seat; and there is no excuse for any but adjustable seats and desks.

The best light is from the top of the window. A window properly lights the room only at a distance of one and a half times its height. The south light is the best. The north light is too cold in winter and lacks the effect of the sun's rays in the room — chemical and hygienic effects not explained, but known to exist. The east and the west window admit the slanting rays in the morning or afternoon. In summer, though the rays are hot, they are nearly vertical at noon and do not shine directly in at the windows of the south exposure. But there should be very light shades to roll from the top and temper the light when it is too bright, and dark shades to roll from the bottom to shut out *the light sometimes* — *to shut it* out from the bottom because, as said above, the light *from the top of the* window shines across the room. An awning of white cotton cloth on

angular frame outside the window would be inexpensive and worth many times th
t in a single summer.

Any intelligent carpenter could build a house like the one described, and if som
hitect would build into it only a little good taste and chaste beauty, the house as we
he teacher would be an educator and a public benefactor.

A. P. MARBLE.

New York City.

APPENDIX N.

SCHOOL SYSTEMS.

ONTARIO.

[From Ontario School Regulations, Arts. 93–6.]

The system of public education in Ontario requires that every position be filled b
ained teacher, and no teacher receives a permanent certificate who does not posse
requisite qualifications as to (1) scholarship, (2) a knowledge of pedagogical prin
es, and (3) success in teaching as shown by actual experience.

The institutions for the preparation of teachers are, first, the county model school
ch one must attend for a session in order to be eligible for examination for a third
s certificate, without which no one can begin teaching in any public school in Ontario
normal schools, of which there are two, one at Toronto and one at Ottawa, and whic
must attend in order to obtain a second-class certificate and a permanent license
the School of Pedagogy at Hamilton, in which are trained the first-class public
ol teachers, the assistant and principals of high schools and collegiate institute
the public-school inspectors. Only first-class teachers can be appointed principals o
nty model schools or members of county boards of examiners. The board of exam
s for any county may, with the approval of the education department, set apart an
lic school to be a county model school for the professional training of teachers.

There are sixty county model schools in Ontario, averaging about thirty pupils i
ndance. Pupils may be admitted on a high-school primary certificate, which i
nted to those who complete the first two years of a high-school course, although th
ils have often completed three or four years of the course. The course of study an
ning continues from the first of September for four months; it comprises schoo
anization and management, methods of instruction, school law and regulations, music
physical exercises; the course in training comprises observation of the work of th
ular teachers, practice in teaching, criticism of work, and discussion of methods.

The minister of education may prescribe a course of reading for teachers of public
ols. The course shall extend over three years, comprising three books each year.
y teacher who desires a certificate of having taken the public school teachers' reading
se shall make a synopsis of not less than ten nor more than fifteen pages of each
k read, and transmit the same to the inspector of his district. The managing com
tee of each teachers' institute shall appoint two persons who, with the inspector, shall
n a committee, to determine whether the synopsis made by the teacher indicates that
books have been intelligently read, and for each book so read the inspector shall issue
ificate, and any teacher submitting a certificate for nine of the books prescribed shall
ive a diploma certifying to the completion of one full reading course of three years.

*In Ontario the law requires that the inspectors of schools shall hold first-class cer
es, certifying to completion of the course of professional study of the School o
ogy at Hamilton, and shall have had three years' experience in teaching.*

NEW BRUNSWICK.

The salaries of teachers shall be provided for from the three following sources, *viz.*: rstly, the provincial treasury; secondly, the county school fund; thirdly, district assess- ient. All other items of fixed or current expenditure shall be provided for by district or ocal assessment. In the distribution of the provincial and county school fund the num- er of days of school session and the average attendance are made factors of such impor- ance as to encourage a long school year (average for the province, 215 days in 1895) and egularity of attendance.

The amount of provincial and county money to be received in any district in aid of chools will depend almost exclusively on the direct efforts made by the inhabitants of ach district in maintaining their own schools . . . . and every such effort will be duly applemented by funds from the county and province. ("Manual of School Law of New Brunswick," Arts. 12-23, and Remarks, p. 56.)

MANITOBA.

In reply to inquiries contained in the circular of the National Council of Education, orwarded by your correspondent at Regina, I beg to say that there is one normal school or the province for the training of first and second-class teachers, and four training chools for professional instruction of teachers holding third-class certificates. No aca- lemic work is done in either the normal or training school. The normal-school course is ive months in length, that of the training school three months. These institutions are ublic, and supported by the province and controlled by the educational department. The raining schools are conducted by the inspectors, who spend eight months of the year in he rural schools and are thoroughly conversant with the requirements of rural districts.

No one is admitted to either normal or training school until he has a non-professional ertificate of the grade for which the school affords professional training. The exam- ation for third-class certificates covers the ordinary subjects of the public-school course, ith physics, botany, algebra to the end of simple equations, and one book of Euclid, ith deductions. Certificates of this grade are good for three years, subject to a limitation be hereafter mentioned.

The second-class non-professional certificate covers ground corresponding in the ain with the requirements for matriculation into Harvard, and the first class corresponds ith the first year of university work, omitting in each case all languages except English. bout one-third of the time of the above courses is given to practice in teaching. In the hools of the towns where the normal and training schools are situated practice is given each of the grades, but the time spent in the first four grades is about three times that ent in the second four. Practice in teaching and a written examination on history of edu- tion, psychology, management, methods, etc., count equally in determining a candidate's ness to receive a certificate. The certificate issued is good for one year. If, after this ar of probation, the inspector so recommends, a third-class certificate good for three ars, or a second or first (according to the grade of non-professional certificate held) od for life or good conduct, is issued. Otherwise the certificate lapses.

Heretofore the holder of a non-professional certificate was allowed to teach without aining for one year. Hereafter, however, no teacher will be allowed to teach in any ublic school who has not at least the professional training above outlined for third-class ertificates.

About 75 per cent. of the graduates are from rural districts and country towns. ixty-six per cent. of the teachers employed in the province in 1895 were trained. After his year all teachers will have training.

Institutes are held by the inspectors and normal-school instructors at points chosen y the Department of Education. They last from two to three days. Eighty per cent.

of the teachers attend. The aim of these institutes is to stimulate to professional study. They are a valuable means of stimulating teachers and arousing interest.

Circulars are sent to teachers and secretaries of school districts, giving notice of place of meeting and programme. Provincial grant is payable to districts whose teachers attend the institutes, as if the school were open.

Upwards of 80 per cent. of the teachers of the province are organized into voluntary associations. The aim and scope of the work are much the same as those of the institutes, but the work is done by the teachers themselves instead of by the normal instructors and inspectors. Several associations sometimes combine to secure the services of a prominent educationalist from outside of the province. The only qualification for membership is that of being a teacher actively engaged in teaching.

Reading circles have been organized only to a limited extent, and the data for reply cannot be obtained. All teachers take one or more teachers' journals. The desirability of doing so is kept before teachers by the inspectors. Certificates to teach are granted only by the Department of Education for the province, so that the provincial or state certificate is the only one valid here.

Teachers are chosen by the school boards of the various districts. Teachers in rural schools are engaged from year to year as a rule. In towns and cities the engagement is continued without re-election. It is impossible to say to what extent anything besides merit operates to determine the choice of teachers in rural districts. In towns appointments are made largely on advice of the supervising officer.

The maximum salary is $1,400 in towns and $720 in rural schools, with an average of $428 for the province and $368 for rural districts. In ten years the average salary has fallen about $90 per annum, owing in part to general depression and in part to competition of large numbers of young teachers using the profession as a stepping stone to some other line of work.

All improvement in educational work, and in status of teacher, must come through better education of the teachers. It is only where our class-rooms are filled with cultured and earnest men and women that teaching will become a profession, and take rank in public estimation in accordance with the importance of the interests committed to the schools.

Winnipeg. DANIEL MCINTYRE.

FRANCE.

In France, which has made so great an effort in late years to advance popular education, the law requires that the candidate for the office of inspector of schools shall be at least twenty-five years of age, shall have had several years' experience in teaching, and shall hold certificates indicating a high grade of scholarship. In his written examination he is required to write a paper on some subject in pedagogy, and one on some subject in school administration; then follows an oral examination covering a wide range of psychology, ethics, pedagogy, and school administration; and then a practical examination, which consists of the inspection of a school, followed immediately by a verbal report.

In view of the increasing importance of inspection it is recommended that the standard be raised so as to require a certificate of qualification for a professorship in a normal school.

NORWAY.

The main obstacle in the way of perfecting the rural schools of Norway is of a geographical kind. Mountain peaks and ranges, valleys and woods, rivers and rapids, are so many barriers to human intercourse of any sort. There are few clusters of farms or cottages sufficient to form villages, so that children very often have to go miles to and from *school without other* means of transport than sleds, skis, or skates.

In spite of these natural hindrances, Norway is well known to have a more enlightened rural populace than most other countries. Every Norwegian peasant under fifty can read, write, and figure; all can read.

Some, or rather many, years ago the country districts of Norway had itinerant teachers, perambulating from farm to farm, gathering about them the nearest children where they came. Teaching of this kind was necessarily very defective, and often the teachers knew so little that it was a case of the blind leading the blind. Norway has changed all that. For twenty-five years or more the teaching force has been uniformly good, trained in the state-endowed seminaries or normal schools. A great majority of these rural teachers are sprung from the people amongst whom they work; they have the advantage of knowing their pupils' condition, peculiarities, and points of view.

Most inhabitants of the city above the laboring classes send their children to higher schools (Borgerskoler and Middelskoler), if they in any way can afford the school fees. In the country it is different. There even well-to-do farmers send their children to the public schools; they have no choice, unless, indeed, they go to the trouble and expense of employing private tutors, which some do.

As a rule, the school children are divided into two classes or grades, attending alternately every other day; each child, in this way, getting about fourteen to eighteen hours' schooling a week, or say 500 to 550 hours a year, the summer vacation lasting only one month.

The branches taught are reading, writing, arithmetic, singing, history, political geography, grammar and composition, religion, and, sometimes, drawing. Norway has an established church (the Lutheran), and all its public schools, therefore, have something of a parochial stamp. Biblical history and the catechism have their hour or even two daily — a serious drawback, admitted to be such both by religious persons and those more latitudinarian. Dissenters' children are, however, exempted from religious instruction, if their parents so desire.

To an American these school hours may seem few; but then the Norwegian children have an advantage over the American: above the primary grade no time is wasted on spelling, it being taken for granted that any child who has arrived at a tolerable command of the mother tongue knows how to spell. To be sure, the Norwegian language has fewer difficulties of pronunciation and spelling than the English.

Quite a prominent factor in the educational system of Norway are the authorized readers. Beginning with short rhyme and moral stories, they carry the child through the country's great past by means of selections from the sagas; contain chapters on botany, zoölogy, physics, and physiology, besides selections from the poets; but the best thing about these readers is their valuable information on almost all topics of vital national interest, from the Lofoden fisheries to the mining industries; they give, in short, a complete picture in miniature of the whole country.

Of late these readers are being discarded for one that promises to be still better, especially in a linguistic respect. As far as language is concerned, Norway is in a somewhat unsettled condition, chiefly in the rural districts. It has an heirloom of old Norse; its various dialects are direct descendants of the language still spoken on Iceland; but its official language is Danish. Of late a fusion of the two has been effected, there is an imperceptible but real change going on, new words are constantly being imported from the dialects into the literary language. Now the chief purpose of the new reader, quite extensive in matter, is to get the actually spoken language as near as possible, the objections to the old readers being that they are too old-fashioned, "bookish."

As to the teachers of the rural districts, they are generally very able men (women teachers *are employed in the cities* only). They are not men of the world, to be sure; *but, looked down on by their urban* brethren, living on a pittance, they are, perhaps, truer

"servants of the idea" (to use an old Norwegian expression) than many more favored and respected men. I have often thought that the branches formally taught in a Norwegian country school are of little significance in comparison with the loftiness of intellectual and moral aim often imparted by the teachers to their scholars.

The country schooling is nominally ended at the confirmation age, say fourteen. But in many places the education is continued in the half-free night schools, where the common-school branches are taught as before, special stress being laid on composition, history, and national literature. Under an able teacher these popular evening schools are very delightful, the teacher often being more of an older and wiser friend than a formal instructor.

A few words must be given to the so-called people's high schools (Folkehøjskoler), institutions patronized by young men and women generally better off. These institutions were founded by the Danish clergyman and educator, Grundtvig. They have always been of more importance in the land of their origin, Denmark, than in Norway. The principals of these schools are generally university-trained, high-minded men, and many of the leaders in Norwegian public life and literature have been connected with them. Of these schools it might be said what Emerson said of books, they are there mainly to inspire. They might also be styled rural counterparts of the university extension and Chautauquan movements. Much of the best in Norwegian national life can be traced directly back to these schools. They are, however, high schools only by courtesy.

Norway is a democratic country. For that reason forces are always at work in the direction of lifting the lower strata up into the daylight of culture and knowledge. Conventions of teachers and educators for the purpose of furthering this aim are very common. All the while self-education is going on. But a few nights ago I read the following letter addressed to a Christiania editor:

"We have an association of young men here, and a library of about 2,000 volumes. We meet once a week, and have readings and lectures. Last week we had a lecture on Schiller's "Wilhelm Tell." With Goethe and Schiller I am fairly well acquainted, but, as Dante is to me an honored name only, please recommend me a good translation of his works."

This letter from a young farmer voices a yearning for light and culture quite common in the rural districts of Norway.

OSCAR GUNDERSEN.

Chicago, Ill.

APPENDIX O.

EXTENSION WORK IN RURAL SCHOOLS.

The following extracts are from a report upon Extension Work in Agriculture, by Professor L. H. Bailey, of Cornell University, Ithaca, N. Y.:

The plan of effort in this teaching was to visit two schools during the day, one in the forenoon and one in the afternoon. The arrangements were made in advance with the school commissioner or the trustees, and the fact that the speakers were to be at the schoolhouse was ordinarily announced some days in advance, so that parents and friends could visit the school at that time if they chose. The teacher was in every case willing to omit the regular exercises for an hour or two, in order that our instructors might take up the work of object teaching with the children. The motive in this work was to find out just how the pupils could be reached by means of object-lesson teaching, and just how much interest they would be likely to manifest in agricultural matters in case it were ever found to be desirable to introduce such teaching as a part of the district school work. *The instructor* would first explain the reason for his coming, and give the school

to understand that no new text-books were for sale and that no new classes were to l required at the hands of the teacher. He then ordinarily took up some simple obje lesson. It might be, in one place, a stalk of corn which he had in his hand, and t process of growth of which he would explain from seed to harvest; it might be, in anoth case, the germination of a bean or a pumpkin seed; it might be, in another case, the hab or structure of a potato bug or some other insect; it might be, again, the reasons wl there were knots and knot holes in the woodwork in the schoolhouse; it might be a ve elementary talk upon the different plant foods which are in the soil; it might be, in oth cases, a very brief sketch, with charts, of some fungus; and so on. These exercises we uniformly well received by both the pupils and the teachers, and this work has, I thin awakened more inspiration in the minds of our instructors than any other attempt whi we have yet made to reach the people. The teachers in the schools have without exce tion expressed themselves as willing and desirous of taking up some such simple exercis as a rest for the pupils two or three times a week, if only they themselves could instructed in the proper methods of carrying on the work. In order to afford this instru tion to the teachers, we are now proposing to issue a series of experimental leaflets object lessons and place these in the hands of the teachers.

There is no doubt of the necessity for work of this kind with the children. The lo or antipathy of the farm is engendered at a very early age in the minds of the youn This has been demonstrated in these October meetings, when we have asked those ch dren who live on farms and who still desire to do so to raise their hands, and we almc uniformly find that the number who desire to live on farms is far less than those w actually do live on them. With these children, ranging trom six to fifteen years of ag the question of pecuniary profits upon the farm has appealed very little, but they a influenced directly by the environments under which they are living. These environmer must be improved; and if they are, there is every reason to expect that children w love the country better than the city. We have thought, therefore, that it is eminent worth the while to instill the love of nature and the knowledge of a multitude of livi things in the minds of the children. An important question here arises: What is to the future of our rural schools and of the agriculture of the state if the present gener tion, as seems so clearly indicated, is not satisfied with rural life and feels no interest maintaining or contributing to the agricultural and educational interests of the stat While many more rural schoolhouses must become deserted, there are thousands of ch dren already in our cities who are deprived of school advantages because adequate roc does not exist for them to get into the schools of the city. The further problem al arises of the difficult economic questions to be met in our cities as the result of congc tion of population. The standard of teaching had been much improved in New Yo state. It had been gratifying to meet so universally teachers who are not only well qua fied, but who are doing excellent work in their schools, and who have the true teachi spirit. Our educational forces are thoroughly efficient and well equipped, but there is need of different application of our school work in rural districts. The life of the distr needs to be changed, and it can in no way be so effectively done as through our schoo The best work cannot be done in schools with an attendance of only half a dozen ch dren. School districts will be forced to even greater consolidation in the future, and would be desirable if families could also be consolidated, for it is the lack of social opp tunity that is felt. It is the isolation of the farm home that the boy and girl dislike these days of close communication and contact with the world which are brought about steam and electricity. School grounds could be enlarged. They should furnish t opportunity for planting trees and shrubs; for the planting of seeds and growing of flo ers; for having a nicely-kept lawn, and, in time, these things, with their influences, wou extend to the homes of children who do not have them and bring with them the

attractions and interest that make a home what it ought to be, pleasant and inviting in its surroundings.

All this work, as I have said, has been experimental—an attempt to discover the best method of teaching the people in agriculture. We believe that the most efficient means of elevating the ideals and practice of the rural communities are as follows, in approximately the order of fundamental importance: (1) The establishment of nature study or object-lesson study, combined with field walks and incidental instruction in the principles of farm practice in the rural schools; (2) the establishment of correspondence instruction in connection with reading courses, binding together the university, the rural schools, and all rural literary or social societies; (3) itinerant or local experiment and investigation, made chiefly as object-lessons to farmers and not for the purpose, primarily, of discovering scientific facts; (4) the publication of reading bulletins which shall inspire a quickened appreciation of rural life, and which may be used as texts in rural societies and in the reading courses, and which shall prepare the way for the reading of the more extended literature in books; (5) the sending out of special agents as lecturers or teachers, or as investigators of special local difficulties, or as itinerant instructors in the normal schools and before the training classes of the teachers' institutes; (6) the itinerant agricultural school, somewhat after the plan of our horticultural schools, which shall be equipped with the very best teachers, and which shall be given as rewards to the most intelligent and energetic communities.

All these agencies, to be most efficient, should be under the direction of a single bureau wholly removed from partisan political influence and intimately associated with investigational work in agriculture. Such a bureau should also have most intimate relations with the Department of Public Instruction, for not only must the public schools be reached, but teachers must be trained. The teachers in our public schools are now of a high grade, and they will quickly seize opportunities to prepare themselves to teach the elements of rural science. There should be facilities placed at the disposal of every normal school in the state, whereby it may receive courses of lectures upon rural subjects from teachers of recognized ability, and teaching-helps, in the way of expository leaflets should be placed in the hands of every teacher who desires them. All this work of carrying the modern university extension impulse to the country is too important and too fundamental to be confined to any one particular agricultural interest or to any one district of the state; and it is a work, too, which should be treated as a teaching extension and not as an experiment-station extension.

In conclusion, I must say that the farmers, as a whole, are willing and anxious for education. They are difficult to reach because they have not been well taught, not because they are unwilling to learn. It is astonishing, as one thinks of it, how scant and poor has been the teaching which has even a remote relation to the tilling of the soil; and many of our rural books seem not to have been born of any real sympathy with the farmer or any just appreciation of his environments. Just as soon as our educational methods are adapted to the farmer's needs, and are born of a love of farm life and are inspired with patriotism, will the rural districts begin to rise in irresistible power.

APPENDIX P.

INSTITUTES IN PENNSYLVANIA.

1. Every county holds an institute annually for a week. Towns, cities, and boroughs hold separate ones for a day or two, or for a week. The course of instruction and the *corps of instructors* in county institutes are entirely determined by the county superintendent, who is always an experienced teacher.

The considerations that secure attendance are: (1) Continuance of salary for the :, if the time be spent at the institute; (2) closing the schools by law during the tute week; (3) the knowledge that the county superintendent will discriminate ast teachers not in attendance, and that directors will do likewise; (4) an institute ramme that attracts, that wins outsiders interested in education.

Only sickness keeps teachers away as a rule. It is unusual for more than one in a ired to be absent. Often every teacher is present. The effect of the institutes upon schools is most potent. The professional spirit of the teachers is intensified, the ity of the teaching is improved, and the interest of the public in education is sed. It is a great revival period, covering the state, the audiences being limited rally by the capacity of the largest halls available.

2. Local institutes are held at different dates in different sections of almost every ty, conducted by the teachers of the neighborhood, and are attended by teachers and ls from adjoining sections. There is generally but one local institute a year in section. It continues for one day. The subjects all relate to work in rural schools.

Pennsylvania. D. J. WALLER, JR.

APPENDIX Q.

THOMAS ARNOLD (1795-1842).

A STUDY FOR RURAL TEACHERS.

We are to study this month the contributions of Thomas Arnold to educational doctrine practice. One of the great biographies in English literature is Dean Stanley's "Life homas Arnold." An American educator says that to become familiar with this biog- y marks an era in the life of a teacher. For material concerning Dr. Arnold's gogical work consult Oscar Browning's "Arnold and Arnoldism" (*Foundations*, of uary, 1897), Payne's "Lectures on Arnold" (pp. 129 and 261, Vol. IV., *Foundations*), n Brown at Rugby," and Carlisle's abridgment of Stanley's "Life of Arnold."

The discussions to take place at the institute session, to be held on the 13th proximo, be founded upon the following questions:

1. Give a brief biographical sketch of Arnold, calling especial attention to events ng formative influence upon his character.
2. Describe the school at Rugby.
3. How did Arnold contribute toward dignifying the profession of teaching?
4. What was his theory with respect to teaching morality?
5. Compare Arnold's views concerning school management with the views advocated ctively by Locke and Herbert Spencer.
6. Prove: Arnold hated shams.
7. Discuss two excellent characteristics of his instruction.
8. What practical lesson with respect to self-government should the teacher learn the study of Arnold?
9. Of what feature of the modern English school would Arnold have entirely dis- oved, and upon what grounds?
10. To what one thing, above everything else, do you attribute Arnold's success?
11. Give in parallel columns a comparative view of the contributions made to educa- al history by Ascham, Locke, Spencer, and Arnold.

Each of the following paragraphs has bearing, direct or indirect, upon this month's n:

1. "A schoolmaster's influence is with the young, the strong, and the happy; and he ot get on with them unless in animal spirits he can sympathize with them, and show that his thoughtfulness is not connected with selfishness and weakness."—Arnold.

2. "What I want is a man who is a Christian and a gentleman, and one who has common sense and understands boys. I do not so much care about scholarship, as he will have immediately under him the lowest forms in the school; but yet, on second thought, I do care about it very much, because his pupils may be in the highest forms; and, besides, I think that even the elements are best taught by a man who has a thorough knowledge of the matter. However, if one must give way, I prefer activity of mind and an interest in his work to high scholarship; for the one may be acquired far more easily than the other." —From one of Arnold's inquiries for a master.

3. "A master should have sufficient vigor of mind and thirst for knowledge to persist in adding to his own stores without neglecting the full improvement of those he is teaching."—From a letter of Arnold to a newly appointed master.

4. "The lapse of years has only served to deepen me in the conviction that no gift can be more valuable than the recollection and inspiration of a great character working on our own."—Dean Stanley, referring to Arnold.

5. "There is no short or royal road to good teaching other than the king's highway of good living. He who wishes to teach well must, first of all, try to live well. He who wishes to do something in his chosen life-work, must aim to be something. He who wishes to have a good influence, must first be a good influence."—James H. Carlisle, of South Carolina.

6. "Not the most eloquent exhortations to the erring and disobedient, though they be in the tongues of men or angels, can move mightily upon your scholars' resolutions till the nameless, unconscious, but infallible presence of a consecrated, earnest heart lifts its holy light into your eyes, hallows your temper, breathes its pleading benedictions into your tones, and authenticates your entire being with its open seal."—From Huntington's "Unconscious Tuition."

7. "The glory of the children is unity with nature; the glory of the teacher is unity with childhood."—G. Stanley Hall.

W. S. SUTTON.

Houston, Tex.

APPENDIX R.

INTELLECTUAL AND MORAL EDUCATION.

[From Les Nouveaux Programmes des Écoles Primaires, a handbook containing the course of study, time tables, directions and explanations for the guidance of the teacher.]

INTELLECTUAL EDUCATION.

The aim of intellectual education in the common school is not to give an exhaustive course of instruction, but to secure to the child the practical knowledge along many lines which he will need in life, so taught as to exercise his faculties, cultivate and enlarge his mind, and thus constitute a true education.

To attain the end of true education it is demanded that there be a continual interaction of the minds of teacher and pupil. The teacher must lead the pupil from the known to the unknown, from the easy to the difficult, from the study of concrete realities to the abstract idea, thus developing the power to compare, to generalize, to reason, without the aid of material examples. The teacher must respect the pupil's intuitive power of grasping, not all truths, but the simplest and most fundamental, and must take care not to waste time in idle discussion, nor in the acquisition of useless knowledge. He must follow the guidance of nature, developing the judgment of the pupil by leading him to judge, the power of observation by making him observe much, the power of reasoning by aiding him to reason for himself.

MORAL EDUCATION.

Moral education is designed to complete, to elevate, and ennoble all the oth instruction of the school. While the other studies develop skill and cultivate intelligen in certain special lines, moral instruction tends to develop the essential character of ma himself. The power of moral education depends less on the precision and the logic connection of the truths taught than on strength of feeling, liveliness of impressio warmth of conviction. It moves the will. It does not undertake to analyze all th reasons for moral action, but it aims, before all else, to produce and to repeat the act; t form a habit of thought which will govern the life. It is not to be considered a scien so much as the art of inclining the will toward the good.

In moral instruction the teacher represents society. He is to organize, and to mak clear and definite, the fundamental moral ideas which the child brings to school; t strengthen these ideas; to make them a motive power in the habitual conduct of life, an thereby to train the child for the varied duties of citizenship.

The moral lesson must be kept distinct in character and form from other lessons. is not enough to give the pupil correct ideas and to furnish him with wise maxims: h must be led to feel the majesty of the moral law. The teacher must keep clearly in min that it is for him to develop, to render acute, to correct, to strengthen the moral sense b exercising often, but with extreme care, the conscience of the child. The instructio should be limited, especially in the earlier years, to the essential elementary points, t those which are clear, simple, yet imperative; avoiding the finer developments of ethi which are appropriate only at a more advanced age, it should aim to lead the child to moral life by such an accumulation of beautiful examples, of good impressions, of whol some ideas, of salutary habits, and of noble aspirations, that he may carry from scho with his acquisitions of elementary knowledge that which is far more precious — a goo conscience.

Success in this instruction demands that the teacher be an example of what is taught that he avoid a mechanical method; that he feel, himself, the true character or force o every lesson, and that he watch the moral development of his pupils with the same solic tude as he watches their progress in scholarship; that he have as much care for th development of character as for that of intellect. This alone can give to the teacher th title of educator, and to elementary instruction the name of liberal education.

APPENDIX S.

CONTINUOUS SESSIONS IN NORMAL SCHOOLS.

[Inserted at the request of the Chairman of the Subcommittee on Supply of Teach ers, as a suggestion worthy of careful consideration.]

A plan for continuous sessions in normal schools has been devised by Presiden Shepard of the State Normal School at Winona, Minn., which, by virtue of a recent act o the legislature, will be entered upon July 1, 1897. It provides for continuous sessions i the schools at Winona and Mankato of four quarters annually of twelve weeks each. Th quarters will open respectively July 1, October 1, January 1, and April 1. This arrange ment of quarters is designedly in the interest of the rural school-teachers. New classes i all subjects will be commenced each quarter, and classes will graduate each quarter. An rural school-teacher will be able to attend at least one full quarter each year. The wor of each quarter will constitute a unit of credit on the regular courses of the school. Th subjects and methods of introduction in the earlier quarters of the several courses wil be those which are especially suited to the needs of teachers of rural schools.

A special summer-term course of six weeks, from July 1 to August 15, is provided for those whose schools begin before the close of the regular summer quarter (October 1). The work of this term will also apply on the regular courses as a minor unit of credit.

The advantages of this plan are apparent. The valuable and extensive equipments of the state normal schools will be made available throughout the year instead of standing idle, as now, many weeks during that part of the year when teachers, especially rural school-teachers, are most at liberty to attend school.

Teachers in rural school service may take up and pursue regular normal-school courses without withdrawing from teaching service. This will be a distinct gain, both to the teaching supply and to the self-supporting teacher who must alternately teach and attend school. It is well known that this constitutes the most valuable and most progressive class of rural school-teachers.

The beginning of new classes each quarter enables teachers to attend school with equal advantage any quarter when at liberty. The present practice of normal schools in graduating classes but once a year and at the close of the graded school year is greatly to the disadvantage of the rural schools. These graduates are largely absorbed by the graded schools, which just at that time of the year are organizing their teaching corps for the following year. When the rural school officers later in the year apply for graduate teachers there are usually none to be had. Under the "Winona" plan at least three classes will be graduated at times during the year when the graded-school situations are not open and just when the rural-school situations are open. This will tend to direct a large and valuable supply of normal-school graduates into rural-school service.

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REPORT OF THE COMMITTEE OF FIFTEEN ON ELEMENTARY EDUCATION · WITH THE REPORTS OF THE SUB-COMMITTEES: ON THE TRAINING OF TEACHERS; ON THE CORRELATION OF STUDIES IN ELEMENTARY EDUCATION; ON THE ORGANIZATION OF CITY SCHOOL SYSTEMS

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W. P. 2

PREFATORY NOTE

THE origin and preparation of the Report of the Committee of Fifteen have been stated by its chairman in the Introduction to the report on pages 7–18.

The PRELIMINARY REPORTS of the three sub-committees—*On the Training of Teachers, On the Correlation of Studies in Elementary Education, On the Organization of City School Systems*—were read before the Department of Superintendence, at Cleveland, and discussed. These preliminary reports have been published in educational periodicals.

During the session of the committee, at Cleveland, instructions were given for the completion of the entire report, including important extracts from letters by distinguished educators to the sub-committees, which make substantial and valuable additions to the reports. The final report, thus completed, was placed in charge of the Board of Trustees for publication, under the control of the National Educational Association, that it may be obtained in a permanent form, at a nominal cost, as the official Report of the Committee of Fifteen.

After correspondence was had with Hon. William T. Harris, United States Commissioner of Education, and others, it was deemed best to arrange for the publication of the Report of the Committee of Fifteen, as a companion to the Report of the Committee of Ten, and thus cover the entire course of instruction from the primary school through a preparation for college. Favorable arrangements have been made for its publication in this manner; and, as in the case of the Report of the Committee of Ten, any profit which may be derived from the sale of this Report of the Committee of Fifteen will be credited to the "Emergency Fund" of the National Educational Association, the conditions and purposes of which fund are stated in the resolution adopted when it was

established; viz., "Said fund shall be subject to expenditure by the Board of Trustees in accordance with votes of the Board of Directors at any regularly called meeting; and it may be used for the purposes of meeting deficiencies of income of the Association, and for such additional investigations and publications as may be determined by said Board of Directors."

The permanent value of the report, and its convenience for ready reference, are greatly enhanced by a full index.

N. A. CALKINS,
Chairman of the Board of Trustees of
The National Educational Association.

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REPORT

OF THE

COMMITTEE OF FIFTEEN

INTRODUCTION

TO THE DEPARTMENT OF SUPERINTENDENCE
OF THE NATIONAL EDUCATIONAL ASSOCIATION:

THE undersigned, chairman of the Committee of Fifteen, appointed at the meeting of the Department of Superintendence held in Boston, Mass., in February, 1893, would respectfully report:

On February 22, 1893, the following resolution was adopted by the Department of Superintendence, on motion of Superintendent Maxwell, of Brooklyn, N. Y.:

Resolved, That a Committee of Ten be appointed by the Committee on Nominations, to investigate the organization of school systems, the coördination of studies in primary and grammar schools, and the training of teachers, with power to organize subconferences on such subdivisions of these subjects as may seem appropriate, and to report the results of their investigations and deliberations at the next meeting of the Department of Superintendence.

Resolved, That the officers of the Department of Superintendence be, and hereby are, directed to make application to the Board of Directors of the National Educational Association for an appropriation of twenty-five hundred dollars to defray the expenses of the Committee of Ten and of the conferences which that committee is empowered to appoint.

On February 23 the Committee on Nominations appointed the following Committee of Ten:

Superintendent William H. Maxwell, of Brooklyn, N. Y.,

chairman; Dr. William T. Harris, United States Commissioner of Education; Superintendent T. M. Balliet, of Springfield, Mass.; Superintendent N. C. Dougherty, of Peoria, Ill.; Superintendent W. B. Powell, of Washington, D. C.; Superintendent H. S. Tarbell, of Providence, R. I.; Superintendent L. H. Jones, of Indianapolis, Ind.; Superintendent J. M. Greenwood, of Kansas City, Mo.; State Superintendent A. B. Poland, of New Jersey; Superintendent Edward Brooks, of Philadelphia.

On motion of Superintendent Maxwell, the members of the Committee on Nominations were added to the Committee of Ten, so that the committee became one of fifteen. The names thus added to the committee were the following: President Andrew S. Draper, of the University of Illinois; Superintendent E. P. Seaver, of Boston, Mass.; Superintendent A. G. Lane, of Chicago, Ill.; Superintendent Charles B. Gilbert, of St. Paul, Minn.; Superintendent Oscar H. Cooper, of Galveston, Tex.

The application for an appropriation to defray the necessary expenses of the committee was presented to the Board of Directors of the National Educational Association, but no action was taken by that body until July, 1894, during the meeting at Asbury Park, N. J., when the sum of one thousand dollars was set apart for the purpose.

In the mean time, however, the committee had not been idle. Individual members had been collecting information and exchanging views by correspondence. During the meeting of the Department of Superintendence held in Richmond, Va., in February, 1894, the committee held two protracted sessions. At these sessions the plan of work for the ensuing year was discussed and determined. The chairman was authorized to divide the members of the committee into three sub-committees—one on the training of teachers, one on the correlation of studies in elementary education, and one on the organization of city school systems.

The sub-committees were appointed as follows:

The Training of Teachers.—Horace S. Tarbell (chairman), Edward Brooks, Thomas M. Balliet, Newton C. Dougherty, and Oscar H. Cooper.

The Correlation of Studies in Elementary Education.—William T. Harris (chairman), James M. Greenwood, Charles B. Gilbert, Lewis H. Jones, and William H. Maxwell.

The Organization of City School Systems.—Andrew S. Draper (chairman), Edwin P. Seaver, Albert G. Lane, Addison B. Poland, and W. B. Powell.

The committee next adopted the following lists of questions, which the members were directed to submit to all persons throughout the country whose opinions might be considered as of value:

TRAINING OF TEACHERS

1. What should be the lowest age at which a person should be permitted to undertake a course of professional work?

2. What should be the requirements for scholarship to enter on such a course?

(*a*) English—Grammar, Historical Grammar, Rhetoric, Literature.
(*b*) Mathematics—Arithmetic, Algebra, Geometry.
(*c*) Botany and Zoölogy.
(*d*) Drawing.
(*e*) Music.
(*f*) History.
(*g*) Geography.
(*h*) Physics.
(*i*) Chemistry.
(*j*) Foreign languages—French, German, Latin, Greek.
(*k*) Physiology and Hygiene.
(*l*) Mineralogy.

3. Should scholarships be determined by an examination, or should a high-school diploma be accepted as evidence? If the latter, should a four years' course be required?

4. What should be the duration of the training-school course?

5. What proportion of this time should be devoted to studying principles and methods of education? What proportion, to the practice of teaching?

6. To what extent should psychology be studied, and in what way?

7. Along what lines should the observation of children be pursued?

8. What measurements of children should be made, and what apparatus should be required for the purpose?

9. In what way should principles of education be derived from psychology and allied sciences?

10. How far and in what way should the history of education be studied? In what way may the history of education be made of practical use to teachers?

11. In what way should the training in teaching the various subjects of the common-school curriculum be pursued?

(*a*) By writing outlines of lessons?
(*b*) By giving lessons to fellow pupil teachers?
(*c*) By the study of books or periodicals devoted to methods of teaching?
(*d*) By lectures?

12. In a model school, should there be a model-teacher placed over each class? Or, should there be a model-teacher placed over every two classes? Or, should the pupil-teachers be held responsible for the teaching of all classes, under the direction of a critic-teacher?

13. What is the most fruitful plan of observing the work of model-teachers?

14. What is the most fruitful plan of criticising the practice work of pupil-teachers?

15. Should the criticism be made by the teachers of methodology, or by critic-teachers appointed specially for the purpose, or by the model-teachers?

16. Should the imparting of knowledge, other than psychology, principles, methods, and history of education, form any part of the work of a normal or training school?

17. How should a pupil-teacher's efficiency be tested in a training school?

18. On what grounds should the diploma of a training school be issued?

CORRELATION OF STUDIES

1. Should the elementary course be eight years and the secondary course four years, as at present? Or, should the elementary course be six years and the secondary course six years?

2. Has each of the grammar school studies—language (including reading, spelling, grammar, composition), mathematics (arithmetic, algebra, plane geometry), geography, history, natural science (botany, zoölogy, mineralogy), penmanship, drawing, etc., a distinct pedagogical value? If so, what is it?

3. Should other subjects than those enumerated in the second question, such as manual training (including sloyd, sewing, and cooking), physical culture, physics, music, physiology (including the effects of stimulants and narcotics), Latin, or a modern language, be taught in the elementary school course? If so, why?

4. Should the sequence of topics be determined by the logical development of the subject, or by the child's power to apperceive new ideas? Or, to any extent by the evolutionary steps manifested by the race? If so, by the evolution of the race to which the child belongs, or that of the human race?

5. What should be the purpose of attempting a close correlation of studies?

(*a*) To prevent duplication, eliminate non-essentials, and save time and effort?
(*b*) To develop the apperceiving power of the mind?
(*c*) To develop character,—a purely ethical purpose?

6. Is it possible on any basis to correlate or unify all the studies of the elementary school?

7. If not, may they be divided into two or more groups, those of each group being correlated?

8. Is there any way of correlating the results of work in all the groups?

9. What should be the length of recitation periods in each year of the elementary school course? What considerations should determine the length?

10. In what year of the course should each of the subjects mentioned in questions 2 and 3 be introduced, if introduced at all?

11. In making a programme, should time be assigned for each subject, or only for the groups of subjects suggested in question 7?

12. How many hours a week for how many years should be devoted to each subject, or each group of subjects?

13. What topics may be covered in each subject, or each group of subjects?

14. Should any subject, or group of subjects, be treated differently for pupils who leave school at twelve, thirteen, or fourteen years of age, and for those who are going to a high school?

15. Can any description be given of the best method of teaching each subject, or group of subjects, throughout the school course?

16. What considerations should determine the point at which the specialization of the work of teachers should begin?

17. On what principle should the promotion of pupils from grade to grade be determined? Who should make the determination?

CITY SCHOOL SYSTEMS

1. Should there be a board of education, or a commissioner with an advisory council?

2. If a commissioner, should he be elected by the people, or appointed by the mayor, or selected in some other way?

3. What should be his powers and duties?

4. If a board of education, of how many members should it consist?

5. Should the members be elected or appointed? From the city at large or to represent districts?

6. Should the members be elected in equal numbers from the two great political parties, or can any other device be suggested to eliminate politics from school administration?

7. By what authority should the superintendent of schools be elected or appointed? and for what term?

8. What should be the qualifications of a city superintendent of schools?

9. Should the city superintendent owe his appointment directly or indirectly to the State educational authorities, and be responsible to them rather than to the local authorities?

10. In whom should be vested the authority to license teachers? To cancel licenses for cause?

11. In whom should be vested the power to appoint teachers? In whom the power to discharge teachers?

12. Supposing teachers appointed to a school, who should have the power to assign them to grades or classes?

13. Should the principle of competitive examination be introduced in determining promotions to positions of greater responsibility or emolument?

14. How should the duties of superintendents on the one hand and of principals on the other, in the supervision of methods and of teaching, be defined?

15. By whom should the course of study be made?

16. By whom should text-books be selected?

17. By whom should promotions be made?

18. By whom should disputes between parents and the teaching force be settled?

19. By whom should a compulsory education law be enforced?

It was further decided that all papers written in answer to these lists of questions were to be placed in the hands of the chairmen of the sub-committees not later than November 1, 1894, and that the chairmen should prepare reports to be submitted to the full committee at a meeting to be held in December of that year.

The next meeting of the committee was held on July 9, 1894, at Asbury Park, N. J., during the session of the National Educational Association at that place. It was there determined that each of the sub-committee chairmen should present the report of his sub-committee to the Department of Superintendence at the meeting to be held in Cleveland, O., in February, 1895. Other details were arranged, and progress was reported in the matter of obtaining opinions from the experts invited to answer the questions formulated by the committee.

On the 10th of December, 1894, the committee met in Washington, D. C. It continued in session four days, holding three sessions each day. During a small fraction of this time the sub-committees met separately; but for the most part the subject matter of each report was discussed by the full committee. All the members were present except Superintendent Powell, who was unfortunately absent through severe illness.

President Draper presented a preliminary report on the organization of city school systems, and Superintendent Tarbell one on the training of teachers. Superintendent Tarbell's report was adopted by the full committee without a dissenting voice. President Draper's report also received the unanimous approval of the committee, except in so far as it recommended the establishment of the office of School Director. Seven votes were recorded in favor of that recommendation. No votes were recorded against it, though several members refrained from voting. Subsequently, when the report was submitted in its final shape, eleven

members signified their approval of the entire report, and signed it.

With regard to the correlation of studies, important differences of opinion were developed in the consideration of the various propositions submitted by Dr. Harris and by other members of the committee. About two-thirds of the time the committee was in session was devoted to the discussion of these propositions. While an adequate conception of the intensity of this discussion cannot now be conveyed to any one who was not present, a brief *résumé* of the leading propositions presented will give some idea of its scope.

The following propositions were unanimously adopted by the full committee:

The civilization of the age—the environment into which the child is born—should determine the selection of the objects of study, to the end that the child may gain an insight into the world in which he lives, and a command over its resources such as is obtained by a helpful coöperation with his fellows.

Psychology should determine the selection and arrangement of the topics within each branch, so as to afford the best exercise of the faculties of the mind, and to secure the unfolding of those faculties in their natural order.

Language, as a subject of study, has a distinct and definite relation to the introduction of the child into the civilization of his time, and has, therefore, a distinct pedagogical value, forming the true basis of correlating the elementary studies.

In correlating geography and history, the former should be subordinate to the latter.

Instruction in the elements of physics and chemistry, in so far as they are to be taught at all in the elementary school, should not be limited to the higher grades, but should be given in all grades in connection with topics in physiology and physical geography.

Elementary geography should not be taught as a special study, but the topics usually included under this caption in

the course of study should be incorporated into the course of form and nature study.

The use of good English, including the correct use of technical terms, should be required in all studies; all use of bad English, caused by, or significant of, confusion of thought, should be corrected by securing the elucidation of the thought; the child's best efforts in speech should be required in all recitations, oral or written; but solecisms should for the most part be corrected in the regular language lessons.

The study of English grammar should be made subordinate and auxiliary to the study of English literature.

Writing, as a special branch, should be taught only through the sixth year of the course.

Manual training in wood and metals should be made a part of the course for boys during the seventh and eighth years; and sewing and cooking should be taught to girls—the former in the fourth, fifth, and sixth years, the latter in the seventh and eighth years.

Music should be taught throughout the elementary course, and the sight reading of music should have a prominent place in the study.

With regard to the following propositions, serious differences of opinion arose:

Algebra should take the place of arithmetic in the eighth year of the elementary course. Rejected.

Algebra (not to the exclusion of arithmetic) should be taught during one-half of the last year of the course. Adopted by a majority.

Latin should be studied during the eighth year instead of English grammar; and English grammar should be studied during the sixth and seventh years. Adopted by a majority.

In the eighth year, an option should be given between Latin and a modern language. Rejected.

United States history should be taken up during the eighth

year, and should be studied only up to the date of the adoption of the Constitution. Rejected.

United States history should be studied for one and a half years. Adopted by a majority.

The Constitution of the United States should be studied for ten weeks during the last year of the course. Adopted by a majority.

If the community is at one on the course of study, all pupils should take the same branches of study, without any omission. Adopted by a majority.

The course of study for elementary schools should admit optional studies on educational grounds for the good of the pupil. Rejected.

Reading should be both silent and oral. There should be at least four lines of connected reading, embracing literature, history, geography, and nature studies. Furthermore, prose and poetry, of an appropriate character, should be read to the classes throughout the grades in which pupils are too young to read such literature themselves. Adopted by a majority.

Concrete geometry should be taught under the head of drawing, and also under the head of mensuration in arithmetic. Rejected.

During an eight-year course (beginning with the sixth year of age) the following subjects should be required from all pupils: English, mathematics, United States history and Constitution, drawing, and music. Not more than one of the following subjects should be pursued, in addition to those enumerated above: Latin, a modern language, natural science, manual training, or concrete geometry. Rejected.

Not more than sixty minutes of outside study should be required of any elementary school pupil. Adopted by a majority.

The propositions stated above were discussed at great *length; and* Dr. Harris was requested, in drawing up his *report, to give* expression to the views of the majority of the

committee as gathered from these discussions, to discuss educational values, to elucidate various phases of correlation, and to arrange a tabular view of the elementary course of study showing the location of each subject and the time to be devoted to it.

The final meeting of the committee was held in Cleveland, O., on February 18, 1895, when the reports of the sub-committees were adopted by the Committee of Fifteen.

With regard to the presentation of the reports to the Department of Superintendence, and with regard to its publication, the committee, having no publication fund at its disposal, and wishing to spread the report before the public at once, at its Washington meeting adopted the following:

Resolved, That the reports of the three sub-committees be read by their respective chairmen before the Department of Superintendence at Cleveland, in February, 1895, and published in the *Educational Review* for March, 1895; provided that the publishers of the *Review* agree to furnish to each member of the Committee of Fifteen, and also to each person appointed to discuss the report before the Cleveland meeting, a printed copy of the report; and immediately after the meeting to send to each educational journal desiring it such a printed copy, with the request that it be published in as nearly complete a form as possible.

The terms of this resolution were conveyed to the editor and publishers of the *Educational Review*, and were accepted by them. The reports were read by the three chairmen of sub-committees before the Department of Superintendence at Cleveland on February 19, 20, and 21, 1895. The reports were printed in the March issue of the *Educational Review*. Printed copies were furnished to the members of the Committee of Fifteen and to the gentlemen appointed to discuss the report. A copy was sent to every educational journal desiring it, and also to every member of the Department who responded to the public invitation to furnish his name and address for the purpose.

As soon as the reports were presented to the Department, they became the property of the National Educational Association.

The following resolution was adopted by the Department of Superintendence on February 21:

Resolved, That we recognize the great value of the report of the Committee of Fifteen in setting forth standards, defining educational values, and furnishing broad grounds for intelligent deliberation and discussion in the future; and that the committee be, and hereby are, authorized to put the report and such dissenting opinions as they may see fit to use into form satisfactory to themselves, and to print the same; and that the committee having performed this duty be discharged.

Upon the same subject the Committee of Fifteen, at its meeting in Washington, on December 11, 1894, adopted the following resolution:

Resolved, That the chairmen of the sub-committees, acting in conjunction with the chairman of the Committee of Fifteen, are hereby authorized to publish such papers as are deemed necessary, as appendices to the general report of the Committee of Fifteen.

It is in accordance with these two resolutions that the present edition is prepared. In addition to this historical statement, and to the original reports of the three sub-committees, it contains, as appendices, such papers and parts of papers, submitted to the sub-committees, as were selected for publication.

It is found impossible to print all the papers submitted to the committee. In making selections, the design has been, as far as practicable, to eliminate repetitions and to preserve all valuable ideas.

WILLIAM H. MAXWELL, *Chairman.*

BROOKLYN, N. Y., *March* 23, 1895.

I

REPORT OF THE

SUB-COMMITTEE ON THE TRAINING OF TEACHERS

This report treats of the training of elementary and secondary teachers, considering first that training which should precede teaching in elementary schools. By elementary schools are meant the primary and grammar departments of graded schools, and ungraded or rural schools.

That teachers are "born, not made," has been so fully the world's thought until the present century that a study of subjects without any study of principles or methods of teaching has been deemed quite sufficient. Modern educational thought and modern practice, in all sections where excellent schools are found, confirm the belief that there is a profound philosophy on which educational methods are based, and that careful study of this philosophy and its application under expert guidance are essential to making fit the man born to teach.

CONDITIONS FOR PROFESSIONAL TRAINING—AGE AND ATTAINMENTS

It is a widely prevalent doctrine, to which the customs of our best schools conform, that teachers of elementary schools should have a secondary or high-school education, and that teachers of high schools should have a collegiate education. Your committee believe that these are the minimum acquirements that can generally be accepted, that the scholarship, culture, and *power gained* by four years of study in advance of

the pupils are not too much to be rightfully demanded, and that as a rule no one ought to become a teacher who has not the age and attainments presupposed in the possessor of a high-school diploma. There are differences in high schools, it is true, and a high school diploma is not a fixed standard of attainment; but in these United States it is one of the most definite and uniform standards that we possess, and varies less than college degrees vary or than elementary schools and local standards of culture vary.

It is of course implied in the foregoing remarks that the high school from which the candidate comes is known to be a reputable school, and that its diploma is proof of the completion of a good four-years' course in a creditable manner. If these conditions do not exist, careful examination is the only recourse. If this condition, high-school graduation or proof by examination of equivalent scholarship, be accepted, the questions of the age and attainment to be reached before entering upon professional study and training are already settled. But if a more definite statement be desired, then it may be said that the candidate for admission to a normal or training school should be eighteen years of age and should have studied English, mathematics, and science to the extent usually pursued in high schools, should be able to write readily, correctly, and methodically upon topics within the teacher's necessary range of thought and conversation, and should have studied, for two or more years, at least one language beside English. Skill in music and drawing is desirable, particularly ability to sketch readily and effectively.

TRAINING SCHOOLS

The training of teachers may be done in normal schools, normal classes in academies and high schools, and in city training schools. To all these the general term "training schools" will be applied. Those instructed in these schools will be called pupils while engaged in professional study, and pupil-teachers or teachers-in-training while in practice-teaching preparatory to graduation. Teachers whose work is to be observed

by pupil-teachers will be called model-teachers; teachers in charge of pupil-teachers during their practice work will be called critic-teachers. In some institutions model-teachers and critic-teachers are the same persons. The studies usually pursued in academies and high schools will be termed academic, and those post-academic studies to be pursued before or during practice-teaching as a preparation therefor will be termed professional.

ACADEMIC STUDIES

Whether academic studies have any legitimate place in a normal or training school is a question much debated. It cannot be supposed that your committee can settle in a paragraph a question upon which many essays have been written, many speeches delivered, and over which much controversy has been waged.

If training schools are to be distinguished from other secondary schools they must do a work not done in other schools. So far as they teach common branches of study they are doing what other schools are doing, and have small excuse for existence; but it may be granted that methods can practically be taught only as to subjects, that the study done in professional schools may so treat of the subjects of study, not as objects to be acquired, but as objects to be presented, that their treatment shall be wholly professional.

One who is to teach a subject needs to know it as a whole made up of related and subordinate parts, and hence must study it by a method that will give this knowledge. It is not necessary to press the argument that many pupils enter normal and training schools with such slight preparation as to require instruction in academic subjects. The college with a preparatory department is, as a rule, an institution of distinctly lower grade than one without such a department. Academic work in normal schools that is of the nature of preparation for professional work, lowers the standard and perhaps the usefulness of such a school; but academic work done as a means of illustrating or enforcing professional truth has its place in a

professional school as in effect a part of the professional work. Professional study differs widely from academic study. In the one, a science is studied in its relation to the studying mind; in the other, in reference to its principles and applications. The aim of one kind of study is power to apply; of the other, power to present. The tendency of the one is to bring the learner into sympathy with the natural world, of the other with the child world. How much broader becomes the teacher who takes both the academic and the professional view! He who learns that he may know and he who learns that he may teach are standing in quite different mental attitudes. One works for knowledge of subject-matter; the other that his knowledge may have due organization, that he may bring to consciousness the apperceiving ideas by means of which matter and method may be suitably conjoined.

How to study is knowledge indispensable to knowing how to teach. The method of teaching can best be illustrated by teaching. The attitude of a pupil in a training school must be that of a learner whose mental stores are expanding, who faces the great world of knowledge with the purpose to survey a portion of it. If we insist upon a sufficient preparation for admission, the question of what studies to pursue and especially the controversy between professional and academic work will be mainly settled.

PROFESSIONAL WORK

Professional training comprises two parts: (*a*) The science of teaching, and (*b*) the art of teaching.

In the *science of teaching* are included: (1) Psychology as a basis for principles and methods; (2) Methodology as a guide to instruction; (3) School economy, which adjusts the conditions of work; and (4) History of education, which gives breadth of view.

The *art of teaching* is best gained: (1) by observation of good teaching; (2) by practice-teaching under criticism.

RELATIVE TIME

The existence and importance of each of these elements in

the training of teachers are generally acknowledged. Their order and proportionate treatment give rise to differences of opinion. Some would omit the practice work entirely, launching the young teacher upon independent work directly from her pupilage in theory. Others, and much the greater number, advise some preparation in the form of guided experience before the training be considered complete. These vary greatly in their estimate of the proportionate time to be given to practice during training. The answers to the question, "What proportion?" which your committee has received, range from one-sixteenth to two-thirds as the proportion of time to be given to practice. The greater number, however, advocate a division of time about equal between theory and practice.

The normal schools incline to the smallest proportion for practice-teaching, the city training-schools to the largest. It should be borne in mind, however, that city training-schools are a close continuation, usually, of high schools, and that the high-school courses give a more uniform and probably a more adequate preparation than the students entering normal schools have usually had. Their facilities for practice-teaching are much greater than normal schools can secure, and for this reason also practice is made relatively more important. As to the relative merits of city training-schools and normal schools, your committee does not desire to express an opinion; the conditions of education demand the existence of both, and both are necessities of educational advancement. It is important to add, however, that in the judgment of your committee not less than half of the time spent under training by the apprentice-teacher should be given to observation and practice, and that this practice in its conditions should be as similar as possible to the work she will later be required to do independently.

SCIENCE OF TEACHING—PSYCHOLOGY

The laws of apperception teach that one is ready to apprehend new truth most readily when he has already established a considerable and well-arranged body of ideas thereon.

Suggestion, observation, and reflection are each most fruit-

ful when a foundation of antecedent knowledge has been provided. Hence your committee recommends that early in their course of study teachers in training assume as true the well-known facts of psychology and the essential principles of education, and make their later study and practice in the light of these principles. These principles thus become the norm of educational thought, and their truth is continually demonstrated by subsequent experience. From this time theory and practice should proceed together in mutual aid and support.

Most fundamental and important of the professional studies which ought to be pursued by one intending to teach is psychology. This study should be pursued at two periods of the training-school course, the beginning and the end, and its principles should be appealed to daily when not formally studied. The method of study should be both deductive and inductive. The terminology should be early learned from a suitable text-book, and significance given to the terms by introspection, observation, and analysis. Power of introspection should be gained, guidance in observation should be given, and confirmation of psychological principles should be sought on every hand. The habit of thinking analytically and psychologically should be formed by every teacher. At the close of the course a more profound and more completely inductive study of physiological psychology should be made. In this way, a tendency to investigate should be encouraged or created.

STUDY OF CHILDREN

Modern educational thought emphasizes the opinion that the child, not the subject of study, is the guide to the teacher's efforts. To know the child is of paramount importance. How to know the child must be an important item of instruction to the teacher in training. The child must be studied as to his physical, mental, and moral condition. Is he in good health? Are his senses of sight and hearing normal, or in what degree *abnormal?* What is his temperament? Which of his faculties

seem weak or dormant? Is he eye-minded or ear-minded? What are his powers of attention? What are his likes and dislikes? How far is his moral nature developed, and what are its tendencies? By what tests can the degree of difference between bright and dull children be estimated?

To study effectively and observingly these and similar questions respecting children, is a high art. No common-sense power of discerning human nature is sufficient; though common sense and sympathy go a long way in such study. Weighing, measuring, elaborate investigation requiring apparatus and laboratory methods, are for experts, not teachers in training. Above all, it must ever be remembered that the child is to be studied as a personality and not as an object to be weighed or analyzed.

METHODOLOGY

A part of the work under this head must be a study of the mental and moral effects of different methods of teaching and examination, the relative value of individual and class instruction at different periods of school life and in the study of different branches. The art of questioning is to be studied in its foundation principles and by the illustration of the best examples. Some review of the branches which are to be taught may be made, making the teacher's knowledge of them ready and distinct as to the relations of the several parts of the subject to one another and of the whole to kindred subjects. These and many such subjects should be discussed in the class in pedagogy, investigation should be begun, and the lines on which it can be followed should be distinctly laid down.

The laws of psychology, or the capabilities and methods of mind-activity, are themselves the fundamental laws of teaching, which is the act of exciting normal and profitable mind-action. Beyond these fundamental laws, the principles of education are to be derived inductively. These inductions when brought to test will be found to be rational inferences from psychological laws and thus founded upon and explained by them.

SCHOOL ECONOMY

School economy, though a factor of great importance in the teacher's training, can be best studied by the teacher of some maturity and experience, and is of more value in the equipment of secondary than of elementary teachers. Only its outlines and fundamental principles should be studied in the ordinary training-school.

HISTORY OF EDUCATION

Breadth of mind consists in the power to view facts and opinions from the standpoints of others. It is this truth which makes the study of history in a full, appreciative way so influential in giving mental breadth. This general advantage the history of education has in still larger degree, because our interest in the views and experiences of those engaged like us in training the young, enables us to enter more fully into their thoughts and purposes than we could into those of the warrior or ruler. From the efforts of the man we imagine his surroundings, which we contrast with our own. To the abstract element of theoretical truth is added the warm human interest we feel in the hero, the generous partisan of truth. The history of education is particularly full of examples of noble purpose, advanced thought, and moral heroism. It is inspiring to fill our minds with these human ideals. We read in the success of the unpractical Pestalozzi the award made to self-sacrifice, sympathy, and enthusiasm expended in giving application to a vital truth.

But with enthusiasm for ideals history gives us caution, warns us against the moving of the pendulum, and gives us points of departure from which to measure progress. It gives us courage to attack difficult problems. It shows which the abiding problems are—those that can be solved only by waiting, and not tossed aside by a supreme effort. It shows us the progress of the race, the changing ideals of the perfect man, and the means by which men have sought to realize these ideals. We can from its study better answer the question, *What is* education, what may it accomplish, and how may its

ideals be realized? It gives the evolution of the present and explains anomalies in our work. And yet the history of education is not a subject to be treated extensively in a training school. All but the outlines may better be reserved for later professional reading.

TRAINING IN TEACHING

Training to teach requires (1) schools for observation, and (2) schools for practice.

Of necessity, these schools must be separate in purpose and in organization. A practice school cannot be a model school. The pupil-teachers should have the opportunity to observe the best models of the teaching art; and the manner, methods, and devices of the model-teacher should be noted, discussed, and referred to the foundation principles on which they rest. Allowable modifications of this observed work may be suggested by the pupil-teacher and approved by the teacher in charge.

There should be selected certain of the best teachers in regular school work whom the pupil-teachers may be sent to observe. The pupil-teachers should take no part in the school work nor cause any change therein. They should, however, be told in advance by the teacher what purpose she seeks to accomplish. This excites expectation and brings into consciousness the apperceiving ideas by which the suggestions of the exercise, as they develop, may be seized and assimilated.

At first these visits should be made in company with their teacher of methods, and the work of a single class in one subject should be first observed. After such visits the teacher of methods in the given subject should discuss with the pupil-teachers the work observed. The pupil-teachers should first describe the work they have seen and specify the excellences noted, and tell why these things are commendable and upon what laws of teaching they are based. Next the pupil-teachers should question the teacher of methods as to the cause, purpose, or influence of things noted, and matters of doubtful propriety—if there be such—should be considered. Then

the teacher in turn should question her pupil-teachers as to matters that seem to have escaped their notice, as to the motive of the model-teacher, as to the reason for the order of treatment, or form of question, wherein lay the merit of her method, the secret of her power. When pupil-teachers have made such observations several times, with several teachers and in several subjects, the broader investigation may be made as to the organization of one of the model rooms, its daily programme of recitations and of study, the methods of discipline, the relations between pupils and teacher, the "school spirit," the school movements, and class progress. This work should be done before teaching groups or classes of pupils is attempted, and should form an occasional exercise during the period of practice-teaching as a matter of relief and inspiration. If an artist requires the suggestive help of a good example that stirs his own originality, why should not a teacher?

THE PRACTICE-SCHOOL

During the course in methodology certain steps closely preparatory to practice-teaching may be taken. 1. The pupil-teacher may analyze the topic to be taught, noting essentials and incidentals, seeking the connections of the subject with the mental possessions of the pupils to be considered and the sequences from these points of contact to the knowledge to be gained under instruction. 2. Next, plans of lessons may be prepared and series of questions for teaching the given subject. 3. Giving lessons to fellow pupil-teachers leads to familiarity with the mechanism of class work, such as calling, directing, and dismissing classes, gives the beginner ease and self-confidence, leads to careful preparation of lessons, gives skill in asking questions and in the use of apparatus.

The practice-teaching should be in another school, preferably in a different building, and should commence with group-teaching in a recitation room apart from the schoolroom. Actual teaching of small groups of children gives opportunity for the study of the child-mind in its efforts at reception and assimilation of new ideas, and shows the modifications in lesson

plans that must be made to adapt the subject matter to the child's tastes and activities. But the independent charge for a considerable time of a schoolroom with a full quota of pupils, the pupil-teacher and the children being much of the time the sole occupants of the room—in short, the realization of ordinary school conditions, with the opportunity to go for advice to a friendly critic, is the most valuable practice; and no practice short of this can be considered of great value except as preparation for this chief form of preparatory practice. All this work should have its due proportion only, or evil may result. For example, lesson plans tend to formalism, to self-conceit, to work in few and narrow lines, to study of subjects rather than of pupils; lessons to fellow-pupils make one self-conscious, hinder the growth of enthusiasm in work, and are entirely barren if carried beyond a very few exercises; teaching groups of children for considerable time unfits the teacher for the double burden of discipline and instruction, to bear both of which simultaneously and easily is the teacher's greatest difficulty and most essential power.

A critic-teacher should be appointed to the oversight of two such pupil-teachers, each in charge of a schoolroom. The critic may also supervise one or more teachers practicing for brief periods daily with groups of children.

The pupil-teachers are now to emphasize practice rather than theory, to work under the direction of one who regards the interests of the children quite as much as those of the teacher-in-training. The critic must admit the principles of education and general methods taught by the teacher of methodology, but she may have her own devices and even special methods that need not be those of the teacher of methodology. No harm will come to the teachers-in-training if they learn that principles must be assented to by all, but that methods may bear the stamp of the personality of the teacher; that all things must be considered from the point of view of their effect upon the pupils; the critic maintaining the claims of the children, the teacher of methods conforming to the laws of mind and the science of the subjects taught. The

critics must teach for their pupil-teachers and show in action the justness of their suggestions. In this sense they are model-teachers as well as critics.

The critic should at the close of school meet her pupil-teachers for a report of their experiences through the day: What they have attempted, how they have tried to do it, why they did so, and what success they gained. Advice as to overcoming difficulties, encouragement under trial, caution if need be, help for the work of to-morrow, occupy the hour. Above all, the critic should be a true friend, a womanly and cultivated woman, and an inspiring companion, whose presence is helpful to work and improving to personality.

LENGTH OF TRAINING-SCHOOL COURSE

There are three elements which determine the time to be spent in a training school—the time given to academic studies, the time given to professional studies, and the time given to practice. The sum of these periods will be the time required for the training course. Taking these in the inverse order, let us consider how much time is required for practice work with pupils. The time given to lesson outlines and practice with fellow pupil-teachers may be considered a part of the professional study rather than of practice-teaching. The period of practice with pupils must not be too short, whether we consider the interests of the pupils or of the teachers-in-training. An effort is usually made to counteract the effect upon the children of a succession of crude efforts of teachers beginning practice by strengthening the teaching and supervision through the employment of a considerable number of model and supervisory teachers, and by dividing the pupils into small groups so that much individual work can be done. These arrangements, while useful for their purpose, destroy to a considerable degree the usual conditions under which school work is to be done and tend to render the teachers-in-training formal and imitative.

The practice room should be, as far as may be, the ordinary *school*, with the difficulties and responsibilities that will be met

later. The responsibility for order, discipline, progress, records, reports, communication with parents and school authorities, must fall fully upon the young teacher, who has a friendly assistant to whom she can go for advice in the person of a wise and experienced critic, not constantly at hand, but constantly within reach.

Between the critic and the teacher-in-training there should exist the most cordial and familiar relations. These relations are based on the one hand upon an appreciation of wisdom and kindness, on the other, upon an appreciation of sincerity and effort. The growth of such relations, and the fruitage which follows their growth, require time. A half-year is not too long to be allotted for them. During this half-year experience, self-confidence and growth in power have been gained; but the pupil-teacher is still not ready to be set aside to work out her own destiny. At this point she is just ready for marked advance, which should be helped and guided. To remain longer with her critic friend may cause imitation rather than independence, may lead to contentment and cessation of growth. She should now be transferred to the care of a second critic of a different personality, but of equal merit. The new critic is bound by her duty and her ambition to see that the first half year's advancement is maintained in the second. The pupil-teacher finds that excellence is not all upon one model. The value of individuality impresses her. She gains a view of solid principles wrapped in diverse characteristics. Her own individuality rises to new importance, and the elements of a growth not at once to be checked start up within her. For the care of the second critic a second half year must be allowed, which extends the practice work with pupils through an entire school year. For the theoretical work a year is by general experience proven sufficient. The ideal training course is, then, one of two years' length.

Provision for the extended practice which is here recommended can be made only by city training-schools and by normal schools having connection with the schools of a city. To set apart a building of several rooms as a school of practice

will answer the purpose only when there are very few teachers in training. In order to give each pupil-teacher a year of practice the number of practice rooms must equal the number of teachers to be graduated annually from the training school, be the number ten, or fifty, or five hundred. In any considerable city a school for practice will not suffice; many schools for practice must be secured. This can be done by selecting one excellent teacher in each of a sufficient number of school buildings, and making her a critic-teacher, giving her charge of two schoolrooms, in each of which is placed a pupil-teacher for training.

This insures that the teaching shall be done as nearly as may be under ordinary conditions, brings the pupil-teachers at once into the general body of teachers, makes the corps of critics a leaven of zeal, and good teaching scattered among the schools. This body of critics will uplift the schools. More capable in the beginning than the average teacher, led to professional study, ambitious for the best things, they make greater progress than they otherwise would do, and are sufficient in themselves to inspire the general body of teachers. For the sake of the pupil-teachers, and the children, too, this plan is best. Its economy also will readily be apparent. This plan has been tried for several years in the schools of Providence, with results fully equal to those herein claimed.

TESTS OF SUCCESS

The tests of success in practice-teaching are in the main those to be applied to all teaching. Do her pupils grow more honest, industrious, polite? Do they admire their teacher? Does she secure obedience and industry only while demanding it, or has she influence that reaches beyond her presence? Do her pupils think well and talk well? As to the teacher herself: Has she sympathy and tact, self-reliance and originality, breadth and intensity? Is she systematic, direct, and business-like? Is she courteous, neat in person and in work? Has she *discernment* of character and a just standard of requirement *and attainment*?

These are some of the questions one must answer before he pronounces any teacher a success or a failure.

Admission to a training school assumes that the pupil has good health, good scholarship, good sense, good ability, and devotion to the work of teaching. If all these continue to be exhibited in satisfactory degree and the pupil goes through the prescribed course of study and practice, the diploma of the school should naturally mark the completion of this work. If it appears on acquaintance that a serious mistake has been made in estimating any of these elements, then, so soon as the mistake is fairly apparent and is probably a permanent condition, the pupil should be requested to withdraw from the work. This is not a case where the wheat and the tares should grow together until the harvest at graduation day or the examination preceding it. With such a foundation continually maintained, it is the duty of the school to conquer success for each pupil.

Teaching does not require genius. Indeed genius, in the sense of erratic ability, is out of place in the teacher's chair. Most good teachers at this close of the nineteenth century are made, not born; made from good material well fashioned. There is, however, a possibility that some idiosyncrasy of character, not readily discovered until the test is made, may rise between the prospective teacher and her pupils, making her influence over them small or harmful. Such a defect, if it exist, will appear during the practice-teaching, and the critic will discover it. This defect, on its first discovery, should be plainly pointed out to the teacher-in-training and her efforts should be joined with those of the critic in its removal.

If this effort be a failure and the defect be one likely to harm the pupils hereafter to be taught, then the teacher-in-training should be informed and requested to withdraw from the school. There should be no test at the close of the school course to determine fitness for graduation. Graduation should find the teacher serious in view of her responsibilities, hopeful because she has learned how success is to be attained, inspired with the belief that growth in herself and in her pupils is the great demand and the great reward.

TRAINING OF TEACHERS FOR SECONDARY SCHOOLS

Perhaps one-sixth of the great body of public school teachers in the United States are engaged in secondary work and in supervision. These are the leading teachers. They give educational tone to communities, as well as inspiration to the body of teachers.

It is of great importance that they be imbued with the professional spirit springing from sound professional culture. The very difficult and responsible positions that they fill demand ripe scholarship, more than ordinary ability, and an intimate knowledge of the period of adolescence, which Rousseau so aptly styles the second birth.

The elementary schools provide for the education of the masses. Our secondary schools educate our social and business leaders. The careers of our college graduates who mainly fill the important places in professional and political life are determined largely by the years of secondary training. The college or university gives expansion and finish, the secondary school gives character and direction.

It should not be forgotten that the superintendents of public schools are largely taken from the ranks of secondary teachers, and that the scholarship, qualities, and training required for the one class are nearly equivalent to that demanded for the other.

Our high schools, too, are the source of supply for teachers in elementary schools. Hence the pedagogic influences exerted in the high school should lead to excellence in elementary teaching.

The superintendent who with long foresight looks to the improvement of his schools will labor earnestly to improve and especially to professionalize the teaching in his high school. The management which makes the high school an independent portion of the school system, merely attached and loftily superior, which limits the supervision and influence of the superintendent to the primary and grammar grades, is short-sighted and destructive.

There ought also to be a place and a plan for the training of teachers for normal schools. The great body of normal and training schools in the United States are secondary schools. Those who are to teach in these schools need broad scholarship, thorough understanding of educational problems, and trained experience. To put into these schools teachers whose scholarship is that of the secondary school and whose training is that of the elementary is to narrow and depress rather than broaden and elevate.

If college graduates are put directly into teaching without special study and training, they will teach as they have been taught. The methods of college professors are not in all cases the best, and, if they were, high school pupils are not to be taught nor disciplined as college students are. High school teaching and discipline can be that neither of the grammar school nor of the college, but is *sui generis*. To recognize this truth and the special differences is vital to success. This recognition comes only from much experience at great loss and partial failure, or by happy intuition not usually to be expected, or by definite instruction and directed practice. Success in teaching depends upon conformity to principles, and these principles are not a part of the mental equipment of every educated person.

These considerations and others are the occasion of a growing conviction, widespread in this land, that secondary teachers should be trained for their work even more carefully than elementary teachers are trained. This conviction is manifested in the efforts to secure normal schools adapted to training teachers for secondary schools, notably in Massachusetts and New York, and in the numerous professorships of pedagogy established in rapidly increasing numbers in our colleges and universities.

The training of teachers for secondary schools is in several essential respects the same as that for teachers of elementary schools. Both demand scholarship, theory, and practice. The degree of scholarship required for secondary teachers is by common consent fixed at a collegiate education. No one—

with rare exceptions—should be employed to teach in a high school who has not this fundamental preparation.

It is not necessary to enter in detail into the work of theoretical instruction for secondary teachers. The able men at the head of institutions and departments designed for such work neither need nor desire advice upon this matter. And yet for the purposes of this report it may be allowable to point out a plan for the organization of a secondary training school.

Let it be supposed that two essentials have been found in one locality, (1) a college or university having a department of pedagogy and a department of post-graduate work; (2) a high school, academy, or preparatory school whose managers are willing to employ and pay a number of graduate students to teach under direction for a portion of each day. These two conditions being met, we will suppose that pedagogy is offered as an elective to the college seniors.

Two years of instruction in the science and art of teaching are to be provided; one, mostly theory with some practice, elective during the senior year; the other, mostly practice with some theory, elective for one year as post-graduate work.

During the senior year is to be studied:

THE SCIENCE OF TEACHING

The elements of this science are:

I. Psychology in its physiological, apperceptive, and experimental features. The period of adolescence here assumes the prominence that childhood has in the psychological study preparatory to teaching in lower schools. This is the period of beginnings, the beginning of a more ambitious and generous life, a life having the future wrapped up in it; a transition period, of mental storm and stress, in which egoism gives way to altruism, romance has charm, and the social, moral, and religious feelings bud and bloom. To guide youth at this formative stage, in which an active fermentation occurs that may give wine or vinegar according to conditions, requires a deep and sympathetic nature, and that knowledge of the changing life which supplies guidance wise and adequate.

II. Methodology: a discussion of the principles of education and of the methods of teaching the studies of the secondary schools.

III. School Economy should be studied in a much wider and more thorough way than is required for elementary teachers. The school systems of Germany, France, England, and the leading systems of the United States should also be studied.

IV. History of education, the tracing of modern doctrine back to its sources; those streams of influence now flowing and those that have disappeared in the sands of the centuries.

V. The philosophy of education as a division of an all-involving philosophy of life and thought in which unity is found.

THE ART OF TEACHING

This includes observation and practice. The observation should include the work of different grades and of different localities, with minute and searching comparison and reports upon special topics. How does excellent primary work differ from excellent grammar-grade work? How do the standards of excellence differ between grammar grades and high-school grades? between high-school and college work? What are the arguments for and against coeducation in secondary schools as determined by experience? What are the upper and lower limits of secondary education as determined by the nature of the pupil's effort?

In the college class in pedagogy much more than in the elementary normal school can the class itself be made to afford a means of practice to its members. Quizzes may be conducted by students upon the chapters of the books read or the lectures of the professors. These exercises may have for their object review, or improved statement, or enlarged inference and application, and they afford an ample opportunity to cultivate the art of questioning, skill in which is the teacher's most essential accomplishment.

The head of the department of pedagogy will of course

present the essential methods of teaching, and the heads of other departments may lecture on methods pertaining to their subject of study; or secondary teachers of known success may still better present the methods now approved in the several departments of secondary work.

POST-GRADUATE YEAR

To those graduates who have elected pedagogy in their senior year may be offered the opportunity of further study in this department, with such other post-graduate work as taste and opportunity permit. From those selecting advanced work in pedagogy the board in charge of the affiliated secondary school should elect as many teachers for its school as are needed, employing them for two-thirds time at one-half the usual pay for teachers without experience. Under the professor of pedagogy of the college, the principal, and the heads of departments of the school these student-teachers should do their work, receiving advice, criticism, and illustration as occasion requires. The time for which they are employed would provide for two hours of class work and about one hour of clerical work or study while in charge of a schoolroom. These student-teachers should be given abundant opportunity for the charge of pupils while reciting or studying, at recess and dismissals, and should have all the responsibilities of members of the faculty of this school. Their work should be inspected as frequently as may be by the heads of the departments in which they teach, by the principal of the school, and by the professor of pedagogy. These appointments would be virtually fellowships with an opportunity for most profitable experience.

In the afternoon of each day these students should attend to college work and especially to instruction from the professor in pedagogy, who could meet them occasionally with the heads of the departments under whose direction they are working.

On Saturdays a seminary of two hours' duration might be held, conducted by the professor of pedagogy and attended by the student-teachers and the more ambitious teachers of experi

ence in the vicinity. These seminaries would doubtless be of great profit to both classes of participants and the greater to each because of the other. [Such a training school for secondary teachers in connection with Brown University and the Providence High School is contemplated for the coming year.]

It will not be needful to specify further the advantages to the student-teachers. The arrangement likewise affords advantage to the affiliated school, especially in the breadth of view this work would afford to the heads of departments, the intense desire it would beget in them for professional skill, the number of perplexing problems which it would force them to attempt the solution of.

The visits of the professor of pedagogy, and the constant comparison he would make between actual and ideal conditions, would lead him to seek the improvement not only of the students in practice but of the school as a whole.

When several earnest and capable people unite in a mutual effort to improve themselves and their work all the essential conditions of progress are present.

HORACE S. TARBELL, *Chairman*,
Superintendent of Schools, Providence, R. I.
EDWARD BROOKS,
Superintendent of Schools, Philadelphia, Pa.
THOMAS M. BALLIET,
Superintendent of Schools, Springfield, Mass.
NEWTON C. DOUGHERTY,
Superintendent of Schools, Peoria, Ill.
OSCAR H. COOPER,
Superintendent of Schools, Galveston, Tex.

II

REPORT OF THE

SUB-COMMITTEE ON THE CORRELATION OF STUDIES IN ELEMENTARY EDUCATION

The undersigned Committee agrees upon the following report, each member reserving for himself the expression of his individual divergence from the opinion of the majority, by a statement appended to his signature, enumerating the points to which exception is taken and the grounds for them.

I. CORRELATION OF STUDIES

Your Committee understands by correlation of studies:

1. Logical order of topics and branches

First, the arrangement of topics in proper sequence in the course of study, in such a manner that each branch develops in an order suited to the natural and easy progress of the child, and so that each step is taken at the proper time to help his advance to the next step in the same branch, or to the next steps in other related branches of the course of study.

2. Symmetrical whole of studies in the world of human learning

Second, the adjustment of the branches of study in such a manner that the whole course at any given time represents all the great divisions of human learning, as far as is possible at the stage of maturity at which the pupil has arrived, and that each allied group of studies is represented by some one of its branches best adapted for the epoch in question; it being implied that there is an equivalence of studies to a greater or less degree within each group, and that each branch of human learning should be represented by some equivalent study; so that, while no great division is left unrepresented, no group

shall have superfluous representatives and thereby debar other groups from a proper representation.

3. Psychological symmetry—the whole mind

Third, the selection and arrangement of the branches and topics within each branch considered psychologically with a view to afford the best exercise of the faculties of the mind, and to secure the unfolding of those faculties in their natural order, so that no one faculty is so overcultivated or so neglected as to produce abnormal or one-sided mental development.

4. Correlation of pupil's course of study with the world in which he lives—his spiritual and natural environment

Fourth and chiefly, your Committee understands by correlation of studies the selection and arrangement in orderly sequence of such objects of study as shall give the child an insight into the world that he lives in, and a command over its resources such as is obtained by a helpful co-operation with one's fellows. In a word, the chief consideration to which all others are to be subordinated, in the opinion of your Committee, is this requirement of the civilization into which the child is born, as determining not only what he shall study in school, but what habits and customs he shall be taught in the family before the school age arrives; as well as that he shall acquire a skilled acquaintance with some one of a definite series of trades, professions, or vocations in the years that follow school; and, furthermore, that this question of the relation of the pupil to his civilization determines what political duties he shall assume and what religious faith or spiritual aspirations shall be adopted for the conduct of his life.

To make more clear their reasons for the preference here expressed for the objective and practical basis of selection of topics for the course of study, rather than the subjective basis so long favored by educational writers, your Committee would describe the psychological basis, already mentioned, as being merely formal in its character, relating only to the exercise of the so-called mental faculties.

It would furnish a training of spiritual powers analogous to the gymnastic training of the muscles of the body. Gymnastics may develop strength and agility without leading to any skill in trades or useful employment. So an abstract psychological training may develop the will, the intellect, the imagination, or the memory, but without leading to an exercise of acquired power in the interests of civilization. The game of chess would furnish a good course of study for the discipline of the powers of attention and calculation of abstract combinations, but it would give its possessor little or no knowledge of man or nature. The psychological ideal which has prevailed to a large extent in education has in the old phrenology, and in the recent studies in physiological psychology, sometimes given place to a biological ideal. Instead of the view of mind as made up of faculties like will, intellect, imagination and emotion, conceived to be all necessary to the soul if developed in harmony with one another, the concept of nerves or brain-tracts is used as the ultimate regulative principle to determine the selection and arrangement of studies. Each part of the brain is supposed to have its claim on the attention of the educator, and that study is thought to be the most valuable which employs normally the larger number of brain-tracts. This view reaches an extreme in the direction of formal as opposed to objective or practical grounds for selecting a course of study. While the old psychology with its mental faculties concentrated its attention on the mental processes and neglected the world of existing objects and relations upon which those processes were directed, physiological psychology tends to confine its attention to the physical part of the process, the organic changes in the brain cells and their functions.

Your Committee is of the opinion that psychology of both kinds, physiological and introspective, can hold only a subordinate place in the settlement of questions relating to the correlation of studies. The branches to be studied, and the *extent* to which they are studied, will be determined mainly *by the* demands of one's civilization. These will prescribe

what is most useful to make the individual acquainted with physical nature and with human nature so as to fit him as an individual to perform his duties in the several institutions—family, civil society, the state, and the Church. But next after this, psychology will furnish important considerations that will largely determine the methods of instruction, the order of taking up the several topics so as to adapt the school work to the growth of the pupil's capacity, and the amount of work so as not to overtax his powers by too much or arrest the development of strength by too little. A vast number of subordinate details belonging to the pathology of education, such as the hygienic features of school architecture and furniture, programmes, the length of study hours and of class exercises, recreation, and bodily reactions against mental effort, will be finally settled by scientific experiment in the department of physiological psychology.

Inasmuch as your Committee is limited to the consideration of the correlation of studies in the elementary school, it has considered the question of the course of study in general only in so far as this has been found necessary in discussing the grounds for the selection of studies for the period of school education occupying the eight years from six to fourteen years, or the school period between the kindergarten on the one hand and the secondary school on the other. It has not been possible to avoid some inquiry into the true distinction between secondary and elementary studies, since one of the most important questions forced upon the attention of your Committee is that of the abridgment of the elementary course of study from eight or more years to seven or even six years, and the corresponding increase of the time devoted to studies usually assigned to the high school and supposed to belong to the secondary course of study for some intrinsic reason.

II. THE COURSE OF STUDY—EDUCATIONAL VALUES

Your Committee would report that it has discussed in detail the several branches of study that have found a place in the curriculum of the elementary school, with a view to dis-

cover their educational value for developing and training the faculties of the mind, and more especially for correlating the pupil with his spiritual and natural environment in the world in which he lives.

A. Language studies

There is first to be noted the prominent place of language study that takes the form of reading, penmanship, and grammar in the first eight years' work of the school. It is claimed for the partiality shown to these studies that it is justified by the fact that language is the instrument that makes possible human social organization. It enables each person to communicate his individual experience to his fellows and thus permits each to profit by the experience of all. The written and printed forms of speech preserve human knowledge and make progress in civilization possible. The conclusion is reached that learning to read and write should be the leading study of the pupil in his first four years of school. Reading and writing are not so much ends in themselves as means for the acquirement of all other human learning. This consideration alone would be sufficient to justify their actual place in the work of the elementary school. But these branches require of the learner a difficult process of analysis. The pupil must identify the separate words in the sentence he uses, and in the next place must recognize the separate sounds in each word. It requires a considerable effort for the child or the savage to analyze his sentence into its constituent words, and a still greater effort to discriminate its elementary sounds. Reading, writing, and spelling in their most elementary form, therefore, constitute a severe training in mental analysis for the child of six to ten years of age. We are told that it is far more disciplinary to the mind than any species of observation of differences among material things, because of the fact that the word has a twofold character—addressed to external sense as spoken sound to the ear, or as written and printed words to the eye—but containing a meaning or sense addressed to the understanding and only to be seized by introspection.

The pupil must call up the corresponding idea by thought, memory, and imagination, or else the word will cease to be a word and remain only a sound or character.

On the other hand, observation of things and movements does not necessarily involve this twofold act of analysis, introspective and objective, but only the latter—the objective analysis. It is granted that we all have frequent occasion to condemn poor methods of instruction as teaching words rather than things. But we admit that we mean empty sounds or characters rather than true words. Our suggestions for the correct method of teaching amount in this case simply to laying stress on the meaning of the word, and to setting the teaching process on the road of analysis of content rather than form. In the case of words used to store up external observation the teacher is told to repeat and make alive again the act of observation by which the word obtained its original meaning. In the case of a word expressing a relation between facts or events, the pupil is to be taken step by step through the process of reflection by which the idea was built up. Since the word, spoken and written, is the sole instrument by which reason can fix, preserve, and communicate both the data of sense and the relations discovered between them by reflection, no new method in education has been able to supplant in the school the branches, reading and penmanship. But the real improvements in method have led teachers to lay greater and greater stress on the internal factor of the word, on its meaning, and have in manifold ways shown how to repeat the original experiences that gave the meaning to concrete words, and the original comparisons and logical deductions by which the ideas of relations and causal processes arose in the mind and required abstract words to preserve and communicate them.

It has been claimed that it would be better to have first a basis of knowledge of things, and secondarily and subsequently a knowledge of words. But it has been replied to this, that the progress of the child in learning to talk indicates his ascent out of mere impressions into the possession of true knowledge. For he names objects only after he has made some synthesis

of his impressions and has formed general ideas. He recognizes the same object under different circumstances of time and place, and also recognizes other objects belonging to the same class by and with names. Hence the use of the word indicates a higher degree of self-activity—the stage of mere impressions without words or signs being a comparatively passive state of mind. What we mean by things first and words afterward, is therefore not the apprehension of objects by passive impressions so much as the active investigation and experimenting which come after words are used and the higher forms of analysis are called into being by that invention of reason known as language, which, as before said, is a synthesis of thing and thought, of outward sign and inward signification.

Rational investigation cannot precede the invention of language any more than blacksmithing can precede the invention of hammers, anvils, and pincers. For language is the necessary tool of thought used in the conduct of the analysis and synthesis of investigation.

Your Committee would sum up these considerations by saying that language rightfully forms the center of instruction in the elementary school, but that progress in methods of teaching is to be made, as hitherto, chiefly by laying more stress on the internal side of the word, its meaning; using better graded steps to build up the chain of experience or the train of thought that the word expresses.

The first three years' work of the child is occupied mainly with the mastery of the printed and written forms of the words of his colloquial vocabulary; words that he is already familiar enough with as sounds addressed to the ear. He has to become familiar with the new forms addressed to the eye, and it would be an unwise method to require him to learn many new words at the same time that he is learning to recognize his old words in their new shape. But as soon as he has acquired some facility in reading what is printed in the colloquial style, he may go on to selections from standard authors. The literary selections should be graded, and are graded in almost *all series* of readers used in our elementary schools, in such

a way as to bring those containing the fewest words outside of the colloquial vocabulary into the lower books of the series, and increasing the difficulties step by step as the pupil grows in maturity. 'The selections are literary works of art possessing the required organic unity and a proper reflection of this unity in the details, as good works of art must do. But they portray situations of the soul, or scenes of life, or elaborated reflections, of which the child can obtain some grasp through his capacity to feel and think, although in scope and compass they far surpass his range. They are adapted therefore to lead him out of and beyond himself, as spiritual guides.

Literary style employs, besides words common to the colloquial vocabulary, words used in a semi-technical sense expressive of fine shades of thought and emotion. The literary work of art furnishes a happy expression for some situation of the soul, or some train of reflection hitherto unutterable in an adequate manner. If the pupil learns this literary production, he finds himself powerfully helped to understand both himself and his fellow-men. The most practical knowledge of all, it will be admitted, is a knowledge of human nature—a knowledge that enables one to combine with his fellow-men and to share with them the physical and spiritual wealth of the race. Of this high character as humanizing or civilizing, are the favorite works of literature found in the school readers, about one hundred and fifty English and American writers being drawn upon for the material. Such are Shakspere's speeches of Brutus and Mark Antony, Hamlet's and Macbeth's soliloquies, Milton's L'Allegro and Il Penseroso, Gray's Elegy, Tennyson's Charge of the Light Brigade and Ode on the Death of the Duke of Wellington, Byron's Waterloo, Irving's Rip Van Winkle, Webster's Reply to Hayne, The trial of Knapp, and Bunker Hill oration, Scott's Lochinvar, Marmion, and Roderick Dhu, Bryant's Thanatopsis, Longfellow's Psalm of Life, Paul Revere, and The Bridge, O'Hara's Bivouac of the Dead, Campbell's Hohenlinden, Collins' How Sleep the Brave, Wolfe's Burial of Sir John Moore, and other fine prose and poetry from Addison, Emerson, Franklin, The Bible,

Hawthorne, Walter Scott, Goldsmith, Wordsworth, Swift, Milton, Cooper, Whittier, Lowell, and the rest. The reading and study of fine selections in prose and verse furnish the chief æsthetic training of the elementary school. But this should be re-enforced by some study of photographic or other reproductions of the world's great masterpieces of architecture, sculpture, and painting. The frequent sight of these reproductions is good; the attempt to copy or sketch them with the pencil is better; best of all is an æsthetic lesson on their composition, attempting to describe in words the idea of the whole that gives the work its organic unity, and the devices adopted by the artist to reflect this idea in the details and re-enforce its strength. The æsthetic taste of teacher and pupil can be cultivated by such exercises, and once set on the road of development this taste may improve through life.

A third phase of language study in the elementary school is formal grammar. The works of literary art in the readers, re-enforced as they ought to be by supplementary reading at home of the whole works from which the selections for the school readers are made, will educate the child in the use of a higher and better English style. Technical grammar never can do this. Only familiarity with fine English works will insure one a good and correct style. But grammar is the science of language, and as the first of the seven liberal arts it has long held sway in school as the disciplinary study *par excellence*. A survey of its educational value, subjective and objective, usually produces the conviction that it is to retain the first place in the future. Its chief objective advantage is that it shows the structure of language, and the logical forms of subject, predicate, and modifier, thus revealing the essential nature of thought itself, the most important of all objects because it is self-object. On the subjective or psychological side, grammar demonstrates its title to the first place by its use as a discipline in subtle analysis, in logical division and classification, in the art of questioning, and in the mental accomplishment of making exact definitions. Nor is this an empty, formal discipline, for its subject matter, language, is a product of the

reason of a people not as individuals but as a social whole, and the vocabulary holds in its store of words the generalized experience of that people, including sensuous observation and reflection, feeling and emotion, instinct and volition.

No formal labor on a great objective field is ever lost wholly, since at the very least it has the merit of familiarizing the pupil with the contents of some one extensive province that borders on his life, and with which he must come into correlation; but it is easy for any special formal discipline, when continued too long, to paralyze or arrest growth at that stage. The overcultivation of the verbal memory tends to arrest the growth of critical attention and reflection. Memory of accessory details too, so much prized in the school, is also cultivated often at the expense of an insight into the organizing principle of the whole and the causal nexus that binds the parts. So too the study of quantity, if carried to excess, may warp the mind into a habit of neglecting quality in its observation and reflection. As there is no subsumption in the quantitative judgment but only dead equality or inequality (A is equal to or greater or less than B), there is a tendency to atrophy in the faculty of concrete syllogistic reasoning on the part of the person devoted exclusively to mathematics. For the normal syllogism uses judgments wherein the subject is subsumed under the predicate (This is a rose—the individual rose is subsumed under the class rose; Socrates is a man, etc.). Such reasoning concerns individuals in two aspects, first as concrete wholes and secondly as members of higher totalities or classes—species and genera. Thus, too, grammar, rich as it is in its contents, is only a formal discipline as respects the scientific, historic, or literary contents of language, and is indifferent to them. A training for four or five years in parsing and grammatical analysis practiced on literary works of art (Milton, Shakspere, Tennyson, Scott) is a training of the pupil into habits of indifference toward and neglect of the genius displayed in the literary work of art, and into habits of impertinent and trifling attention to elements employed as material or texture, and a corresponding neglect of the structural form which alone is

the work of the artist. A parallel to this would be the mason's habit of noticing only the brick and mortar, or the stone and cement, in his inspection of the architecture, say of Sir Christopher Wren. A child overtrained to analyze and classify shades of color—examples of this one finds occasionally in a primary school whose specialty is "objective teaching"—might in later life visit an art gallery and make an inventory of colors without getting even a glimpse of a painting as a work of art. Such overstudy and misuse of grammar as one finds in the elementary school, it is feared, exists to some extent in secondary schools and even in colleges, in the work of mastering the classic authors.

Your Committee is unanimous in the conviction that formal grammar should not be allowed to usurp the place of a study of the literary work of art in accordance with literary method. The child can be gradually trained to see the technical "motives" of a poem or prose work of art and to enjoy the æsthetic inventions of the artist. The analysis of a work of art should discover the idea that gives it organic unity; the collision and the complication resulting; the solution and *dénouement*. Of course these things must be reached in the elementary school without even a mention of their technical terms. The subject of the piece is brought out; its reflection in the conditions of the time and place to heighten interest by showing its importance; its second and stronger reflection in the several details of its conflict and struggle; its reflection in the *dénouement* wherein its struggle ends in victory or defeat and the ethical or rational interests are vindicated,—and the results move outward, returning to the environment again in ever-widening circles,—something resembling this is to be found in every work of art, and there are salient features which can be briefly but profitably made subject of comment in familiar language with even the youngest pupils. There is an ethical and an æsthetical content to each work of art. It is profitable to point out both of these in the interest of the child's growing insight into human nature. The ethical should, however, be *kept in* subordination to the æsthetical, but for the sake of the

supreme interests of the ethical itself. Otherwise the study of a work of art degenerates into a goody-goody performance, and its effects on the child are to cause a reaction against the moral. The child protects his inner individuality against effacement through external authority by taking an attitude of rebellion against stories with an appended moral. Herein the superiority of the æsthetical in literary art is to be seen. For the ethical motive is concealed by the poet, and the hero is painted with all his brittle individualism and self-seeking. His passions and his selfishness, gilded by fine traits of bravery and noble manners, interest the youth, interest us all. The established social and moral order seems to the ambitious hero to be an obstacle to the unfolding of the charms of individuality. The deed of violence gets done, and the Nemesis is aroused. Now his deed comes back on the individual doer, and our sympathy turns against him and we rejoice in his fall. Thus the æsthetical unity contains within it the ethical unity. The lesson of the great poet or novelist is taken to heart, whereas the ethical announcement by itself might have failed, especially with the most self-active and aspiring of the pupils. Aristotle pointed out in his Poetics this advantage of the æsthetic unity, which Plato in his Republic seems to have missed. Tragedy purges us of our passions, to use Aristotle's expression, because we identify our own wrong inclinations with those of the hero, and by sympathy we suffer with him and see our intended deed returned upon us with tragic effect, and are thereby cured.

Your Committee has dwelt upon the æsthetic side of literature in this explicit manner because they believe that the general tendency in elementary schools is to neglect the literary art for the literary formalities which concern the mechanical material rather than the spiritual form. Those formal studies should not be discontinued, but subordinated to the higher study of literature.

Your Committee reserves the subject of language lessons, composition writing, and what relates to the child's expression of ideas in writing, for consideration under Part 3 of this Report, treating of programme.

B. Arithmetic

Side by side with language study is the study of mathematics in the schools, claiming the second place in importance of all studies. It has been pointed out that mathematics concerns the laws of time and space—their structural form, so to speak—and hence that it formulates the logical conditions of all matter both in rest and in motion. Be this as it may, the high position of mathematics as the science of all quantity is universally acknowledged. The elementary branch of mathematics is arithmetic, and this is studied in the primary and grammar schools from six to eight years, or even longer. The relation of arithmetic to the whole field of mathematics has been stated (by Comte, Howison, and others) to be that of the final step in a process of calculation in which results are stated numerically. There are branches that develop or derive quantitative functions: say geometry for spatial forms, and mechanics for movement and rest and the forces producing them. Other branches transform these quantitative functions into such forms as may be calculated in actual numbers; namely, algebra in its common or lower form, and in its higher form as the differential and integral calculus, and the calculus of variations. Arithmetic evaluates or finds the numerical value for the functions thus deduced and transformed. The educational value of arithmetic is thus indicated both as concerns its psychological side and its objective practical uses in correlating man with the world of nature. In this latter respect as furnishing the key to the outer world in so far as the objects of the latter are a matter of direct enumeration,—capable of being counted,—it is the first great step in the conquest of nature. It is the first tool of thought that man invents in the work of emancipating himself from thraldom to external forces. For by the command of number he learns to divide and conquer. He can proportion one force to another, and concentrate against an obstacle precisely what is needed to overcome it. Number also makes possible all the other sciences of nature which depend on exact measurement and exact record of phenomena as to the

following items: order of succession, date, duration, locality, environment, extent of sphere of influence, number of manifestations, number of cases of intermittence. All these can be defined accurately only by means of number. The educational value of a branch of study that furnishes the indispensable first step toward all science of nature is obvious. But psychologically its importance further appears in this, that it begins with an important step in analysis; namely, the detachment of the idea of quantity from the concrete whole which includes quality as well as quantity. To count, one drops the qualitative and considers only the quantitative aspect. So long as the individual differences (which are qualitative in so far as they distinguish one object from another) are considered, the objects cannot be counted together. When counted, the distinctions are dropped out of sight as indifferent. As counting is the fundamental operation of arithmetic, and all other arithmetical operations are simply devices for speed by using remembered countings instead of going through the detailed work again each time, the hint is furnished the teacher for the first lessons in arithmetic. This hint has been generally followed out and the child set at work at first upon the counting of objects so much alike that the qualitative difference is not suggested to him. He constructs gradually his tables of addition, subtraction, and multiplication, and fixes them in his memory. Then he takes his next higher step, namely the apprehension of the fraction. This is an expressed ratio of two numbers, and therefore a much more complex thought than he has met with in dealing with the simple numbers. In thinking five-sixths he first thinks five and then six, and holding these two in mind thinks the result of the first modified by the second. Here are three steps instead of one, and the result is not a simple number but an inference resting on an unperformed operation. This psychological analysis shows the reason for the embarrassment of the child on his entrance upon the study of fractions and the other operations that imply ratio. The teacher finds all his resources in the way of method drawn upon to invent steps and half steps,

to aid the pupil to make continuous progress here. All these devices of method consist in steps by which the pupil descends to the simple number and returns to the complex. He turns one of the terms into a qualitative unit and thus is enabled to use the other as a simple number. The pupil takes the denominator, for example, and makes clear his conception of one-sixth as his qualitative unit, then five-sixths is as clear to him as five oxen. But he has to repeat this return from ratio to simple numbers in each of the elementary operations—addition, subtraction, multiplication, and division, and in the reduction of fractions—and finds the road long and tedious at best. In the case of decimal fractions the psychological process is more complex still; for the pupil has given him one of the terms, the numerator, from which he must mentally deduce the denominator from the position of the decimal point. This doubles the work of reading and recognizing the fractional number. But it makes addition and subtraction of fractions nearly as easy as that of simple numbers and assists also in multiplication of fractions. But division of decimals is a much more complex operation than that of common fractions.

The want of a psychological analysis of these processes has led many good teachers to attempt decimal fractions with their pupils before taking up common fractions. In the end they have been forced to make introductory steps to aid the pupil and in these steps to introduce the theory of the common fraction. They have by this refuted their own theory.

Besides (*a*) simple numbers and the four operations with them, (*b*) fractions common and decimal, there is (*c*) a third step in number, namely the theory of powers and roots. It is a further step in ratio, namely the relation of a simple number to itself as power and root. The mass of material which fills the arithmetic used in the elementary school consists of two kinds of examples, first, those wherein there is a direct application of simple numbers, fractions, and powers, and secondly the class of examples involving operations in reaching numerical solutions through indirect data and consequently involving more or less transformation of functions. Of this character

is most of the so-called higher arithmetic and such problems in the text-book used in the elementary schools as have, not inappropriately, been called (by General Francis A. Walker in his criticism on common-school arithmetic) numerical "conundrums." Their difficulty is not found in the strictly arithmetical part of the process of the solution (the third phase above described), but rather in the transformation of the quantitative function given into the function that can readily be calculated numerically. The transformation of functions belongs strictly to algebra. Teachers who love arithmetic, and who have themselves success in working out the so-called numerical conundrums, defend with much earnestness the current practice which uses so much time for arithmetic. They see in it a valuable training for ingenuity and logical analysis, and believe that the industry which discovers arithmetical ways of transforming the functions given in such problems into plain numerical operations of adding, subtracting, multiplying, or dividing is well bestowed. On the other hand the critics of this practice contend that there should be no merely formal drill in school for its own sake, and that there should be, always, a substantial content to be gained. They contend that the work of the pupil in transforming quantitative functions by arithmetical methods is wasted, because the pupil needs a more adequate expression than number for this purpose; that this has been discovered in algebra, which enables him to perform with ease such quantitative transformations as puzzle the pupil in arithmetic. They hold, therefore, that arithmetic pure and simple should be abridged and elementary algebra introduced after the numerical operations in powers, fractions, and simple numbers have been mastered, together with their applications to the tables of weights and measures and to percentage and interest. In the seventh year of the elementary course there would be taught equations of the first degree and the solution of arithmetical problems that fall under proportion or the so-called "rule of three," together with other problems containing complicated conditions—those in partnership for example. In the eighth year quadratic

equations could be learned, and other problems of higher arithmetic solved in a more satisfactory manner than by numerical methods. It is contended that this earlier introduction of algebra, with a sparing use of letters for known quantities, would secure far more mathematical progress than is obtained at present on the part of all pupils, and that it would enable many pupils to go on into secondary and higher education who are now kept back on the plea of lack of preparation in arithmetic, the real difficulty in many cases being a lack of ability to solve algebraic problems by an inferior method.

Your Committee would report that the practice of teaching two lessons daily in arithmetic, one styled "mental" or "intellectual" and the other "written" arithmetic (because its exercises are written out with pencil or pen) is still continued in many schools. By this device the pupil is made to give twice as much time to arithmetic as to any other branch. It is contended by the opponents of this practice, with some show of reason, that two lessons a day in the study of quantity have a tendency to give the mind a bent or set in the direction of thinking quantitatively with a corresponding neglect of the power to observe, and to reflect upon, qualitative and causal aspects. For mathematics does not take account of causes, but only of equality and difference in magnitude. It is further objected that the attempt to secure what is called thoroughness in the branches taught in the elementary schools is often carried too far; in fact, to such an extent as to produce arrested development (a sort of mental paralysis) in the mechanical and formal stages of growth. The mind in that case loses its appetite for higher methods and wider generalizations. The law of apperception, we are told, proves that temporary methods of solving problems should not be so thoroughly mastered as to be used involuntarily or as a matter of unconscious habit, for the reason that a higher and a more adequate method of solution will then be found more difficult to acquire. The more thoroughly a method is learned, the *more it* becomes part of the mind and the greater the repugnance of the mind toward a new method. For this reason

parents and teachers discourage young children from the practice of counting on the fingers, believing that it will cause much trouble later to root out this vicious habit and replace it by purely mental processes. Teachers should be careful, especially with precocious children, not to continue too long in the use of a process that is becoming mechanical; for it is already growing into a second nature, and becoming a part of the unconscious apperceptive process by which the mind reacts against the environment, recognizes its presence, and explains it to itself. The child that has been overtrained in arithmetic reacts apperceptively against his environment chiefly by noticing its numerical relations—he counts and adds; his other apperceptive reactions being feeble, he neglects qualities and causal relations. Another child who has been drilled in recognizing colors apperceives the shades of color to the neglect of all else. A third child, excessively trained in form studies by the constant use of geometric solids and much practice in looking for the fundamental geometric forms lying at the basis of the multifarious objects that exist in the world, will as a matter of course apperceive geometric forms, ignoring the other phases of objects.

It is, certainly, an advance on immediate sense-perception to be able to separate or analyze the concrete, whole impression, and consider the quantity apart by itself. But if arrested mental growth takes place here the result is deplorable. That such arrest may be caused by too exclusive training in recognizing numerical relations is beyond a doubt.

Your Committee believes that, with the right methods, and a wise use of time in preparing the arithmetic lesson in and out of school, five years are sufficient for the study of mere arithmetic—the five years beginning with the second school year and ending with the close of the sixth year; and that the seventh and eighth years should be given to the algebraic method of dealing with those problems that involve difficulties in the transformation of quantitative indirect functions into numerical or direct quantitative data.

Your Committee, however, does not wish to be understood

as recommending the transfer of algebra, as it is understood and taught in most secondary schools, to the seventh year or even to the eighth year of the elementary school. The algebra course in the secondary school, as taught to pupils in their fifteenth year of age, very properly begins with severe exercises with a view to discipline the pupil in analyzing complex literate expressions at sight and to make him able to recognize at once the factors that are contained in such combinations of quantities. The proposed seventh-grade algebra must use letters for the unknown quantities and retain the numerical form of the known quantities, using letters for these very rarely, except to exhibit the general form of solution or what, if stated in words, becomes a so-called "rule" in arithmetic. This species of algebra has the character of an introduction or transitional step to algebra proper. The latter should be taught thoroughly in the secondary school. Formerly it was a common practice to teach elementary algebra of this sort in the preparatory schools and reserve for the college a study of algebra proper. But in this case there was often a neglect of sufficient practice in factoring literate quantities, and as a consequence the pupil suffered embarrassment in his more advanced mathematics, for example in analytical geometry, the differential calculus, and mechanics. The proposition of your Committee is intended to remedy the two evils already named: first to aid the pupils in the elementary school to solve, by a higher method, the more difficult problems that now find place in advanced arithmetic; and secondly, to prepare the pupil for a thorough course in pure algebra in the secondary school.

Your Committee is of the opinion that the so-called mental arithmetic should be made to alternate with written arithmetic for two years and that there should not be two daily lessons in this subject.

C. Geography

The leading branch of the seven liberal arts was grammar, being the first of the *Trivium* (grammar, rhetoric, and logic).

Arithmetic, however, led the second division, the *Quadrivium* (arithmetic, geometry, music, and astronomy). We have glanced at the reasons for the place of grammar as leading the humane studies as well as for the place of arithmetic as leading the nature studies. Following arithmetic as the second study in importance among the branches that correlate man to nature is geography. It is interesting to note that the old quadrivium of the Middle Ages included geography, under the title of geometry, as the branch following arithmetic in the enumeration; the subject matter of their so-called "geometry" being chiefly an abridgment of Pliny's geography, to which were added a few definitions of geometric forms, something like the primary course in geometric solids in our elementary schools. So long as there has been elementary education there has been something of geography included. The Greek education laid stress on teaching the second book of Homer containing the Catalogue of the Ships and a brief mention of the geography and history of all the Greek tribes that took part in the Trojan War. History remains unseparated from geography and geometry in the Middle Ages. Geography has preserved this comprehensiveness of meaning as a branch of the study in the elementary schools down to the present day. After arithmetic, which treats of the abstract or general conditions of material existence, comes geography with a practical study of man's material *habitat* and its relations to him. It is not a simple science by itself, like botany or geology or astronomy, but a collection of sciences levied upon to describe the earth as the dwelling-place of man and to explain something of its more prominent features. About one-fourth of the material relates strictly to the geography, about one-half to the inhabitants, their manners, customs, institutions, industries, productions, and the remaining one-fourth to items drawn from the sciences of mineralogy, meteorology, botany, zoölogy, and astronomy. This predominance of the human feature in a study ostensibly relating to physical nature, your Committee considers necessary and entirely justifiable. The child commences with what is nearest to his interests, and proceeds gradually toward what is

remote and to be studied for its own sake. It is therefore a mistake to suppose that the first phase of geography presented to the child should be the process of continent formation. He must begin with the natural differences of climate and lands and waters and obstacles that separate peoples, and study the methods by which man strives to equalize or overcome these differences by industry and commerce, to unite all places and all people, and make it possible for each to share in the productions of all. The industrial and commercial idea is therefore the first central idea in the study of geography in the elementary schools. It leads directly to the natural elements of difference in climate, soil, and productions, and also to those in race, religion, political status, and occupations of the inhabitants, with a view to explain the grounds and reasons for this counter-process of civilization which struggles to overcome the differences. Next comes the deeper inquiry into the process of continent formation, the physical struggle between the process of upheaving or upbuilding of continents and that of their obliteration by air and water; the explanation of the mountains, valleys, and plains, the islands, volcanic action, the winds, the rain-distribution. But the study of cities, their location, the purposes they serve as collecting, manufacturing, and distributing centers, leads most directly to the immediate purpose of geography in the elementary school. From this beginning, and holding to it as a permanent interest, the inquiry into causes and conditions proceeds concentrically to the sources of the raw materials, the methods of their production and the climatic, geologic, and other reasons that explain their location and their growth.

In recent years, especially through the scientific study of physical geography, the processes that go to the formation of climate, soil, and general configuration of land masses have been accurately determined, and the methods of teaching so simplified that it is possible to lead out from the central idea mentioned to the physical explanations of the elements of *geographical* difference quite early in the course of study. *Setting* out from the idea of the use made of the earth by

civilization, the pupil in the fifth and sixth years of his schooling (at the age of eleven or twelve) may extend his inquiries quite profitably as far as the physical explanations of land-shapes and climates. In the seventh and eighth year of school much more may be done in this direction. But it is believed that the distinctively human interest connected with geography in the first years of its study should not yield to the purely scientific one of physical processes until the pupil has taken up the study of history.

The educational value of geography, as it is and has been in elementary schools, is obviously very great. It makes possible something like accuracy in the picturing of distant places and events and removes a large tract of mere superstition from the mind. In the days of newspaper reading one's stock of geographical information is in constant requisition. A war on the opposite side of the globe is followed with more interest in this year than a war near our own borders before the era of the telegraph. The general knowledge of the locations and boundaries of nations, of their status in civilization and their natural advantages for contributing to the world market, is of great use to the citizen in forming correct ideas from his daily reading.

The educational value of geography is even more apparent if we admit the claims of those who argue that the present epoch is the beginning of an era in which public opinion is organized into a ruling force by the agency of periodicals and books. Certainly neither the newspaper nor the book can influence an illiterate people: they can do little to form opinions where the readers have no knowledge of geography.

As to the psychological value of geography little need be said. It exercises in manifold ways the memory of forms and the imagination; it brings into exercise the thinking power in tracing back toward unity the various series of causes. What educative value there is in geology, meteorology, zoölogy, ethnology, economics, history, and politics is to be found in the more profound study of geography, and, to a proportionate extent, in the study of its merest elements.

Your Committee is of the opinion that there has been a vast improvement in the methods of instruction in this branch in recent years, due in large measure to the geographical societies of this and other countries. At first there prevailed what might be named sailor geography. The pupil was compelled to memorize all the capes and headlands, bays and harbors, mouths of rivers, islands, sounds, and straits around the world. He enlivened this to some extent by brief mention of the curiosities and oddities in the way of cataracts, water-gaps, caves, strange animals, public buildings, picturesque costumes, national exaggerations, and such matters as would furnish good themes for sailors' yarns. Little or nothing was taught to give unity to the isolated details furnished in endless number. It was an improvement on this when the method of memorizing capital cities and political boundaries succeeded. With this came the era of map drawing. The study of watersheds and commercial routes, of industrial productions and centers of manufacture and commerce, has been adopted in the better class of schools. Instruction in geography is growing better by the constant introduction of new devices to make plain and intelligible the determining influence of physical causes in producing the elements of difference and the counter-process of industry and commerce by which each difference is rendered of use to the whole world and each locality made a participator in the productions of all.

D. History

The next study, ranked in order of value, for the elementary school is History. But, as will be seen, the value of history, both practically and psychologically, is less in the beginning and greater at the end than geography. For it relates to the institutions of men, and especially to the political state and its evolution. While biography narrates the career of the individual, civil history records the careers of nations. The nation has been compared to the individual by persons interested in the educational value of history. Man has two selves, *they* say, the individual self, and the collective self of the

organized state or nation. The study of history is, then, the study of this larger, corporate, social, and civil self. The importance of this idea is thus brought out more clearly in its educational significance. For to learn this civil self is to learn the substantial condition which makes possible the existence of civilized man in all his other social combinations—the family, the Church, and the manifold associated activities of civil society. For the state protects these combinations from destruction by violence. It defines the limits of individual and associated effort, within which each endeavor re-enforces the endeavors of all, and it uses the strength of the whole nation to prevent such actions as pass beyond these safe limits and tend to collision with the normal action of the other individuals and social units. Hobbes called the state a Leviathan, to emphasize its stupendous individuality and organized self-activity. Without this, he said, man lives in a state of "constant war, fear, poverty, filth, ignorance, and wretchedness; within the state dwell peace, security, riches, science, and happiness." The state is the collective man who "makes possible the rational development of the individual man, like a mortal God, subduing his caprice and passion and compelling obedience to law, developing the ideas of justice, virtue, and religion, creating property and ownership, nurture and education." The education of the child into a knowledge of this higher self begins early within the nurture of the family. The child sees a policeman or some town officer, some public building, a court house or a jail; he sees or hears of an act of violence, a case of robbery or murder followed by arrest of the guilty. The omnipresent higher self, which has been invisible hitherto, now becomes visible to him in its symbols and still more in its acts.

History in school, it is contended, should be the special branch for education in the duties of citizenship. There is ground for this claim. History gives a sense of belonging to a higher social unity which possesses the right of absolute control over person and property in the interest of the safety of the whole. This, of course, is the basis of citizenship; the

individual must feel this or see this solidarity of the state and recognize its supreme authority. But history shows the collisions of nations, and the victory of one political ideal accompanied by the defeat of another. History reveals an evolution of forms of government that are better and better adapted to permit individual freedom, and the participation of all citizens in the administration of the government itself.

People who make their own government have a special interest in the spectacle of political evolution as exhibited in history. But it must be admitted that this evolution has not been well presented by popular historians. Take, for instance, the familiar example of old-time pedagogy, wherein the Roman republic was conceived as a freer government than the Roman empire that followed it, by persons apparently misled by the ideas of representative self-government associated with the word *republic*. It was the beginning of a new epoch when this illusion was dispelled, and the college student became aware of the true Roman meaning of *republic*, namely, the supremacy of an oligarchy on the Tiber that ruled distant provinces in Spain, Gaul, Asia Minor, Germany, and Africa, for its selfish ends and with an ever-increasing arrogance. The people at home in Rome, not having a share in the campaigns on the borderland, did not appreciate the qualities of the great leaders who, like Cæsar, subdued the nations by forbearance, magnanimity, trust, and the recognition of a sphere of freedom secured to the conquered by the Roman civil laws, which were rigidly enforced by the conqueror, as much as by the violence of arms. The change from republic to empire meant the final subordination of this tyrannical Roman oligarchy, and the recognition of the rights of the provinces to Roman freedom. This illustration shows how easily a poor teaching of history may pervert its good influence or purpose into a bad one. For the Roman monarchy under the empire secured a degree of freedom never before attained under the republic, in spite of the election of such tyrants as Nero and Caligula to the imperial purple. The civil service went on as usual administering the affairs of *distant* countries, educating them in Roman jurisprudence, and

cultivating a love for accumulating private property. Those countries had before lived communistically after the style of the tribe or at best of the village community. Roman private property in land gave an impulse to the development of free individuality such as had always been impossible under the social stage of development known as the village community.

To teach history properly is to dispel this shallow illusion which flatters individualism, and to open the eyes of the pupil to the true nature of freedom, namely the freedom through obedience to just laws enforced by a strong government.

Your Committee has made this apparent digression for the sake of a more explicit statement of its conviction of the importance of teaching history in a different spirit from that of abstract freedom, which sometimes means anarchy, although they admit the possibility of an opposite extreme, the danger of too little stress on the progressive element in the growth of nations and its manifestation in new and better political devices for representing all citizens without weakening the central power.

That the history of one's own nation is to be taught in the elementary school seems fixed by common consent. United States history includes first a sketch of the epoch of discoveries and next of the epoch of colonization. This fortunately suits the pedagogic requirements. For the child loves to approach the stern realities of a firmly established civilization through its stages of growth by means of individual enterprise. Here is the use of biography as introduction to history. It treats of exceptional individuals whose lives bring them in one way or another into national or even world-historical relations. They throw light on the nature and necessity of governments, and are in turn illuminated by the light thrown back on them by the institutions which they promote or hinder. The era of semi-private adventure with which American history begins is admirably adapted for study by the pupil in the elementary stage of his education. So too the next epoch, that of colonization. The pioneer is a degree nearer to civilization than is the explorer and discoverer. In the colonial history the pupil

interests himself in the enterprise of aspiring individualities, in their conquest over obstacles of climate and soil; their conflicts with the aboriginal population; their choice of land for settlement; the growth of their cities; above all, their several attempts and final success in forming a constitution securing local self-government. An epoch of growing interrelation of the colonies succeeds, a tendency to union on a large scale due to the effect of European wars which involved England, France, and other countries, and affected the relations of their colonies in America. This epoch too abounds in heroic personalities, like Wolfe, Montcalm, and Washington, and perilous adventures, especially in the Indian warfare.

The fourth epoch is the Revolution, by which the Colonies through joint effort secured their independence and afterward their union in a nation. The subject grows rapidly more complex and tasks severely the powers of the pupils in the eighth year of the elementary school. The formation of the Constitution, and a brief study of the salient features of the Constitution itself, conclude the study of the portion of the history of the United States that is sufficiently remote to be treated after the manner of an educational classic. Everything up to this point stands out in strong individual outlines and is admirably fitted for that elementary course of study. Beyond this point, the War of 1812 and the War of the Rebellion, together with the political events that led to it, are matters of memory with the present generation of parents and grandparents, and are consequently not so well fitted for intensive study in school as the already classic period of our history. But these later and latest epochs may be and will be read at home not only in the text-book on history used in the schools, but also in the numerous sketches that appear in newspapers, magazines, and in more pretentious shapes. In the intensive study which should be undertaken of the classic period of our history, the pupil may be taught the method appropriate to historical investigation, the many points of view *from* which each event ought to be considered. He should *learn to* discriminate between the theatrical show of events and

the solid influences that move underneath as ethical causes. Although he is too immature for very far-reaching reflections, he must be helped to see the causal processes of history. Armed with this discipline in historic methods, the pupil will do all of his miscellaneous reading and thinking in this province with more adequate intellectual reaction than was possible before the intensive study carried on in school.

The study of the outlines of the Constitution, for ten or fifteen weeks in the final year of the elementary school, has been found of great educational value. Properly taught, it fixes the idea of the essential threefoldness of the constitution of a free government and the necessary independence of each constituent power, whether legislative, judicial, or executive. This and some idea of the manner and mode of filling the official places in these three departments, and of the character of the duties with which each department is charged, lay foundations for an intelligent citizenship.

Besides this intensive study of the history of the United States in the seventh and eighth years, your Committee would recommend oral lessons on the salient points of general history, taking a full hour of sixty minutes weekly—and preferably all at one time—for the sake of the more systematic treatment of the subject of the lesson and the deeper impression made on the mind of the pupil.

E. Other branches

Your Committee has reviewed the staple branches of the elementary course of study in the light of their educational scope and significance. Grammar, literature, arithmetic, geography, and history are the five branches upon which the disciplinary work of the elementary school is concentrated. Inasmuch as reading is the first of the scholastic arts, it is interesting to note that the whole elementary course may be described as an extension of the process of learning the art of reading. First comes the mastering of the colloquial vocabulary in printed and script forms. Next come five incursions into the special vocabularies required (*a*) in literature to express the fine shades

of emotion and the more subtle distinctions of thought, (*b*) the technique of arithmetic, (*c*) of geography, (*d*) of grammar, (*e*) of history.

In the serious work of mastering these several technical vocabularies the pupil is assigned daily tasks that he must prepare by independent study. The class exercise or recitation is taken up with examining and criticising the pupil's oral statements of what he has learned, especial care being taken to secure the pupil's explanation of it in his own words. This requires paraphrases and definitions of the new words and phrases used in technical and literary senses, with a view to insure the addition to the mind of the new ideas corresponding to the new words. The misunderstandings are corrected and the pupil set on the way to use more critical alertness in the preparation of his succeeding lessons. The pupil learns as much by the recitations of his fellow-pupils as he learns from the teacher, but not the same things. He sees in the imperfect statements of his classmates that they apprehended the lesson with different presuppositions and consequently have seen some phases of the subject that escaped his observation, while they in turn have missed points which he had noticed quite readily. These different points of view become more or less his own, and he may be said to grow by adding to his own mind the minds of others.

It is clear that there are other branches of instruction that may lay claim to a place in the course of study of the elementary school; for example the various branches of natural science, vocal music, manual training, physical culture, drawing, etc.

Here the question of another method of instruction is suggested. There are lessons that require previous preparation by the pupil himself—there are also lessons that may be taken up without such preparation and conducted by the teacher, who leads the exercise and furnishes a large part of the information to be learned, enlisting the aid of members of the class for the purpose of bringing home the new material to their actual *experience*. Besides these there are mechanical exercises for purposes of training, such as drawing, penmanship, and calisthenics.

In the first place there is industrial and æsthetic drawing, which should have a place in all elementary school work. By it is secured the training of the hand and eye. Then, too, drawing helps in all the other branches that require illustration. Moreover, if used in the study of the great works of art in the way hereinbefore mentioned, it helps to cultivate the taste and prepares the future workman for a more useful and lucrative career, inasmuch as superior taste commands higher wages in the finishing of all goods.

Natural science claims a place in the elementary school not so much as a disciplinary study side by side with grammar, arithmetic, and history, as a training in habits of observation and in the use of the technique by which such sciences are expounded. With a knowledge of the technical terms and some training in the methods of original investigation employed in the sciences, the pupil broadens his views of the world and greatly increases his capacity to acquire new knowledge. For the pupil who is unacquainted with the technique of science has to pass without mental profit the numerous scientific allusions and items of information which more and more abound in all our literature, whether of an ephemeral or a permanent character. In an age whose proudest boast is the progress of science in all domains, there should be in the elementary school, from the first, a course in the elements of the sciences. And this is quite possible; for each science possesses some phases that lie very near to the child's life. These familiar topics furnish the doors through which the child enters the various special departments. Science, it is claimed, is nothing if not systematic. Indeed, science itself may be defined as the interpretation of each fact through all other facts of a kindred nature. Admitting that this is so, it is no less true that pedagogic method begins with the fragmentary knowledge possessed by the pupil and proceeds to organize it and build it out systematically in all directions. Hence any science may be taken up best on the side nearest the experience of the pupil and the investigation continued until the other parts are reached. Thus the pedagogical order is not always

the logical or scientific order. In this respect it agrees with the order of discovery, which is usually something quite different from the logical order, for that is the last thing discovered. The natural sciences have two general divisions: one relating to inorganic matter, as physics and chemistry, and one relating to organic, as botany and zoölogy. There should be a spiral course in natural science, commencing each branch with the most interesting phases to the child. A first course should be given in botany, zoölogy, and physics, so as to treat of the structure and uses of familiar plants and animals, and the explanation of physical phenomena as seen in the child's playthings, domestic machines, etc. A second course covering the same subjects, but laying more stress on classification and functions, will build on to the knowledge already acquired from the former lessons and from his recently acquired experience. A third course of weekly lessons, conducted by the teacher as before in a conversational style, with experiments and with a comparison of the facts of observation already in the possession of the children, will go far to helping them to an acquisition of the results of natural science. Those of the children specially gifted for observation in some one or more departments of nature will be stimulated and encouraged to make the most of their gifts.

In the opinion of your Committee there should be set apart a full hour each week for drawing and the same amount for oral lessons in natural science.

The oral lessons in history have already been mentioned. The spiral course, found useful in natural science because of the rapid change in capacity of comprehension by the pupil from his sixth to his fourteenth year, will also be best for the history course, which will begin with biographical adventures of interest to the child, and possessing an important historical bearing. These will proceed from the native land first to England, the parent country, and then to the classic civilizations (Greece and Rome being, so to speak, the grandparent countries of the American colonies). These successive courses of *oral lessons* adapted respectively to the child's capacity will do *much* to make the child well informed on this topic. Oral

lessons should never be mere lectures, but more like Socratic dialogues, building up a systematic knowledge partly from what is already known, partly by new investigations, and partly by comparison of authorities.

The best argument in favor of weekly oral lessons in natural science and general history is the actual experiences of teachers who have for some time used the plan. It has been found that the lessons in botany, zoölogy, and physics give the pupil much aid in learning his geography and other lessons relating to nature, while the history lessons assist very much his comprehension of literature, and add interest to geography.

It is understood by your Committee that the lessons in physiology and hygiene (with special reference to the effects of stimulants and narcotics) required by State laws should be included in this oral course in natural science. Manual training, so far as the theory and use of the tools for working in wood and iron are concerned, has just claims on the elementary school for a reason similar to that which admits natural science. From science have proceeded useful inventions for the aid of all manner of manufactures and transportation. The child of to-day lives in a world where machinery is constantly at his hand. A course of training in wood- and iron-work, together with experimental knowledge of physics or natural philosophy, makes it easy for him to learn the management of such machines. Sewing and cookery have not the same but stronger claims for a place in school. One-half day in each week for one-half a year each in the seventh and eighth grades will suffice for manual training, the sewing and cookery being studied by the girls, and the wood- and iron-work by the boys. It should be mentioned, however, that the advocates of manual training in iron-and wood-work recommend these branches for secondary schools, because of the greater maturity of body, and the less likelihood to acquire wrong habits of manipulation, in the third period of four years of school.

Vocal music has long since obtained a well-established place in all elementary schools. The labors of two generations of special teachers have reduced the steps of instruction to such

simplicity that whole classes may make as regular progress in reading music as in reading literature.

In regard to physical culture your Committee is agreed that there should be some form of special daily exercises amounting in the aggregate to one hour each week, the same to include the main features of calisthenics, and German, Swedish, or American systems of physical training, but not to be regarded as a substitute for the old-fashioned recess established to permit the free exercise of the pupils in the open air. Systematic physical training has for its object rather the will training than recreation, and this must not be forgotten. To go from a hard lesson to a series of calisthenic exercises is to go from one kind of will training to another. Exhaustion of the will should be followed by the caprice and wild freedom of the recess. But systematic physical exercise has its sufficient reason in its aid to a graceful use of the limbs, its development of muscles that are left unused or rudimentary unless called forth by special training, and for the help it gives to the teacher in the way of school discipline.

Your Committee would mention in this connection instruction in morals and manners, which ought to be given in a brief series of lessons each year with a view to build up in the mind a theory of the conventionalities of polite and pure-minded society. If these lessons are made too long or too numerous, they are apt to become offensive to the child's mind. It is of course understood by your Committee that the substantial moral training of the school is performed by the discipline rather than by the instruction in ethical theory. The child is trained to be regular and punctual, and to restrain his desire to talk and whisper—in these things gaining self-control day by day. The essence of moral behavior is self-control. The school teaches good behavior. The intercourse of a pupil with his fellows without evil words or violent actions is insisted on and secured. The higher moral qualities of truth-telling and sincerity are taught in every class exercise that lays stress on accuracy of statement.

Your Committee has already discussed the importance of

teaching something of algebraic processes in the seventh and eighth grades with the view to obtaining better methods of solving problems in advanced arithmetic; a majority of your Committee are of the opinion that formal English grammar should be discontinued in the eighth year, and the study of some foreign language, preferably that of Latin, substituted. The educational effect on an English-speaking pupil of taking up a language which, like Latin, uses inflections instead of prepositions, and which further differs from English by the order in which its words are arranged in the sentence, is quite marked, and a year of Latin places a pupil by a wide interval out of the range of the pupil who has continued English grammar without taking up Latin. But the effect of the year's study of Latin increases the youth's power of apperception in very many directions by reason of the fact that so much of the English vocabulary used in technical vocabularies, like those of geography, grammar, history, and literature, is from a Latin source, and besides there are so many traces in the form and substance of human learning of the hundreds of years when Latin was the only tongue in which observation and reflection could be expressed.

Your Committee refers to the programme given later in this report for the details of co-ordinating these several branches already recommended.

The difference between elementary and secondary studies

In recommending the introduction of algebraic processes in the seventh and eighth years—as well as in the recommendation just now made to introduce Latin in the eighth year of the elementary course—your Committee has come face to face with the question of the intrinsic difference between elementary and secondary studies.

Custom has placed algebra, geometry, the history of English literature, and Latin in the rank of secondary studies; also general history, physical geography, and the elements of physics and chemistry. In a secondary course of four years trigonometry may be added to the mathematics; some of

the sciences whose elements are used in physical geography may be taken up separately in special treatises, as geology, botany, and physiology. There may be also a study of whole works of English authors, as Shakspere, Milton, and Scott. Greek is also begun in the second or third year of the secondary course. This is the custom in most public high schools. But in private secondary schools Latin is begun earlier, and so, too, Greek, algebra, and geometry. Sometimes geometry is taken up before algebra, as is the custom in German schools. These arrangements are based partly on tradition, partly on the requirements of higher institutions for admission, and partly on the ground that the intrinsic difficulties in these studies have fixed their places in the course of study. Of those who claim that there is an intrinsic reason for the selection and order of these studies, some base their conclusions on experience in conducting pupils through them, others on psychological grounds. The latter contend, for example, that algebra deals with general forms of calculation, while arithmetic deals with the particular instances of calculation. Whatever deals with the particular instance is relatively elementary, whatever deals with the general form is relatively secondary. In the expression $a+b=c$ algebra indicates the form of all addition. This arithmetic cannot do, except in the form of a verbal rule describing the steps of the operation: its examples are all special instances falling under the general form given in algebra. If, therefore, arithmetic is an elementary branch, algebra is relatively to it a secondary branch. So, too, geometry, though not directly based on arithmetic, has to presuppose an acquaintance with it when it reduces spatial functions into numerical forms, as, for example, in the measurement of surfaces and solids, and in ascertaining the ratio of the circumference to the radius, and of the hypotenuse to the two other sides of the right-angled triangle. Geometry, moreover, deals with necessary relations; its demonstrations reach universal and necessary conclusions, holding good not merely in such material shapes as we have met with *in actual* experience, but with all examples possible, past,

present, or future. Such knowledge transcending experience is intrinsically secondary as compared with the first acquaintance with geometric shapes in concrete examples.

In the case of geometry it is claimed by some that what is called "inventional geometry" may be properly introduced into the elementary grades. By this some mean the practice with blocks in the shape of geometric solids and the construction of different figures from the same; others mean the rediscovery by the pupil for himself of the necessary relations demonstrated by Euclid. The former—exercises of construction with blocks—are well enough in the kindergarten, where they assist in learning number, as well as in the analysis of material forms. But its educational value is small for pupils advanced into the use of books. The original discovery of Euclid's demonstrations, on the other hand, belongs more properly to higher education than to elementary. In the geometrical text-books recently introduced into secondary schools there is so much of original demonstration required that the teacher is greatly embarrassed on account of the differences in native capacity for mathematics that develop among the pupils of the same class in solving the problems of invention. A few gifted pupils delight in the inventions, and develop rapidly in power, while the majority of the class use too much time over them, and thus rob the other branches of the course of study, or else fall into the bad practice of getting help from others in the preparation of their lessons. A few in every class fall hopelessly behind and are discouraged. The result is an attempt on the part of the teacher to correct the evil by requiring a more thorough training in the mathematical studies preceding, and the consequent delay of secondary pupils in the lower grades of the course in order to bring up their "inventional geometry." Many, discouraged, fail to go on; many more fail to reach higher studies because unable to get over the barrier unnecessarily placed before them by teachers who desire that no pupils except natural geometricians shall enter into higher studies.

Physical geography in its scientific form is very properly made a part of the secondary course of study. The pupil in

his ninth year of work can profitably acquire the scientific technique of geology, botany, zoölogy, meteorology, and ethnology, and in the following years take up those sciences separately and push them further, using the method of actual investigation. The subject-matter of physical geography is of very high interest to the pupil who has studied geography in the elementary grades after an approved method. It takes up the proximate grounds and causes for the elements of difference on the earth's surface, already become familiar to him through his elementary studies, and pushes them back into deeper, simpler, and more satisfactory principles. This study performs the work also of correlating the sciences that relate to organic nature by showing their respective uses to man. From the glimpses which the pupil gets of mineralogy, geology, botany, zoölogy, ethnology, and meteorology in their necessary connection as geographic conditions he sees the scope and grand significance of those separate inquiries. A thirst is aroused in him to pursue his researches into their domains. He sees, too, the borderlands in which new discoveries may be made by the enterprising explorer.

Physics, including what was called until recently "natural philosophy," after Newton's *Principia* (*Philosophiæ naturalis principia mathematica*), implies more knowledge of mathematics for its thorough discussion than the secondary pupil is likely to possess. In fact, the study of this branch in college thirty years ago was crippled by the same cause. It should follow the completion of analytical geometry. Notwithstanding this, a very profitable study of this subject may be made in the second year of the high school or preparatory school, although the formulas can then be understood in so far as they imply elementary algebra only. The pupil does not get the most exact notions of the quantitative laws that rule matter in its states of motion and equilibrium, but he does see the action of forces as qualitative elements of phenomena, and understand quite well the mechanical inventions by which men subdue them for his use and safety. Even in the elementary grades the pupil can seize very many of these qualitative aspects and learn the

explanation of the mechanical phenomena of nature, and other applications of the same principles in invention, as for example, gravitation in falling bodies: its measurement by the scales; the part it plays in the pump, the barometer, the pendulum; cohesion in mud, clay, glue, paste, mortar, cement, etc.; capillary attraction in lamp-wicks, sponges, sugar, the sap in plants; the applications of lifting by the lever, pulley, inclined plane, wedge, and screw; heat in the sun, combustion, friction, steam, thermometer, conduction, clothing, cooking, etc.: the phenomena of light, electricity, magnetism, and the explanation of such mechanical devices as spectacles, telescopes, microscopes, prisms, photographic cameras, electric tension in bodies, lightning, mariner's compass, horseshoe magnet, the telegraph, the dynamo. This partially qualitative study of forces and mechanical inventions has the educational effect of enlightening the pupil, and emancipating him from the network of superstition that surrounds him in the child world, partly of necessity and partly by reason of the illiterate adults that he sometimes meets with in the persons of nurses, servants, and tradespeople, whose occupations have more attraction for him than those of cultured people. The fairy world is a world of magic, of immediate interventions of supernatural spiritual beings, and while this is proper enough for the child up to the time of the school, and in a lessening degree for some time after, it is only negative and harmful in adult manhood and womanhood. It produces arrested development of powers of observation and reflection in reference to phenomena, and stops the growth of the soul at the infantine stage of development. Neither is this infantine stage of wonder and magic more religious than the stage of disillusion through the study of mathematics and physics. It is the arrest of religious development also, at the stage of fetichism. The highest religion, that of pure Christianity, sees in the world infinite mediations, all for the purpose of developing independent individuality; the perfection of human souls not only in one kind of piety, namely that of the heart, but in the piety of the intellect that beholds truth, the piety of the will

that does good deeds wisely, the piety of the senses that sees the beautiful and realizes it in works of art. This is the Christian idea of divine Providence as contrasted with the heathen idea of that Providence, and the study of natural philosophy is an essential educational requisite in its attainment, although a negative means. Of course there is danger of replacing the spiritual idea of the divine by the dynamical or mechanical idea and thus arresting the mind at the stage of pantheism instead of fetichism. But this danger can be avoided by further education through secondary into higher education, whose entire spirit and method are comparative and philosophical in the best sense of the term. For higher education seems to have as its province the correlation of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization. By it one learns to see each branch, each science or art or discipline, in the light of all the others. This higher or comparative view is essential to any completeness of education, for it alone prevents the one-sidedness of hobbies, or "fads" as they are called in the slang of the day. It prevents also the bad effects that flow from the influence of what are termed "self-educated men," who for the most part carry up with them elementary methods of study, or at best, secondary methods, which accentuate the facts and relations of natural and spiritual phenomena, but do not deal with their higher correlations. The comparative method cannot, in fact, be well introduced until the student is somewhat advanced, and has already completed his elementary course of study dealing with the immediate aspects of the world, and his secondary course dealing with the separate formal and dynamical aspects that lie next in order behind the facts of first observation. Higher education in a measure unifies these separate formal and dynamic aspects, corrects their one-sidedness, and prevents the danger of what is so often noted in the self-educated men who unduly exaggerate some one of the subordinate aspects of the world and make it a sort of first principle.

Here your Committee finds in its way the question of the *use of the* full scientific method in the teaching of science in

the elementary school. The true method has been called the method of investigation, but that method as used by the child is only a sad caricature of the method used by the mature scientific man, who has long since passed through the fragmentary observation and reflection that prevail in the period of childhood, as well as the tendencies to exaggeration of the importance of one or another branch of knowledge at the expense of the higher unity that correlates all; an exaggeration that manifests itself in the possession and use of a hobby. The ideal scientific man has freed himself from obstacles of this kind, whether psychological or objective. What astronomical observers call the subjective coefficient must be ascertained and eliminated from the record that shows beginnings, endings, and rates. There is a possibility of perfect specialization in a scientific observer only after the elementary and secondary attitudes of mind have been outgrown. An attempt to force the child into the full scientific method by specialization would cause an arrest of his development in the other branches of human learning outside of his specialty. He could not properly inventory the data of his own special sphere unless he knew how to recognize the defining limits or boundaries that separate his province from its neighbors. The early days of science abounded in examples of confusion of provinces in the inventories of their data. It is difficult, even now, to decide where physics and chemistry leave off, and biology begins.

Your Committee does not attempt to state the exact proportion in which the child, at his various degrees of advancement, may be able to dispense with the guiding influence of teacher and text-book in his investigations, but they protest strongly against the illusion under which certain zealous advocates of the early introduction of scientific method seem to labor. They ignore in their zeal the deduction that is to be made for the guiding hand of the teacher, who silently furnishes to the child the experience that he lacks, and quietly directs his special attention to this or to that phase, and prevents him from hasty or false generalization as well as from undue exaggeration of single facts or principles. Here the teacher adds

the needed scientific outlook which the child lacks, but which the mature scientist possesses for himself.

It is contended by some that the scientific frame of mind is adapted only to science, but not to art, literature, and religion, which have something essential that science does not reach; not because of the incompleteness of the sciences themselves, but because of the attitude of the mind assumed in the observation of nature. In analytic investigation there is isolation of parts one from another, with a view to find the sources of the influences which produce the phenomena shown in the object. The mind brings everything to the test of this idea. Every phenomenon that exists comes from beyond itself, and analysis will be able to trace the source.

Now, this frame of mind, which insists on a foreign origin of all that goes to constitute an object, debars itself in advance from the province of religion, art, and literature as well as of philosophy. For self-determination, personal activity, is the first principle assumed by religion, and it is tacitly assumed by art and literature, Classic and Christian. The very definition of philosophy implies this, for it is the attempt to explain the world by the assumption of a first principle, and to show that all classes of objects imply that principle as ultimate presupposition. According to this view it is important not to attempt to hasten the use of a strictly scientific method on the part of the child. In his first years he is acquiring the results of civilization rather as an outfit of habits, usages, and traditions than as a scientific discovery. He cannot be expected to stand over against the culture of his time, and challenge one and all of its conventionalities to justify themselves before his reason. His reason is too weak. He is rather in the imitation stage of mind than in that of criticism. He will not reach the comparative or critical method until the era of higher education.

However this may be, it is clear that the educational value of science and its method is a very important question, and that on it depends the settlement of the question where specialization may begin. To commence the use of the real *scientific* method would imply a radical change also in methods

from the beginning. This may be realized by considering the hold which even the kindergarten retains upon symbolism and upon art and literature. But in the opinion of a majority of your Committee natural science itself should be approached, in the earliest years of the elementary school, rather in the form of results with glimpses into the methods by which these results were reached. In the last two years (the seventh and eighth) there may be some strictness of scientific form and an exhibition of the method of discovery. The pupil, too, may to some extent put this method in practice himself. In the secondary school there should be some laboratory work. But the pupil cannot be expected to acquire for himself fully the scientific method of dealing with nature until the second part of higher education—its post-graduate work. Nevertheless this good should be kept in view from the first year of the elementary school, and there should be a gradual and continual approach to it.

In the study of general history appears another branch of the secondary course. History of the native land is assumed to be an elementary study. History of the world is certainly a step further away from the experience of the child. It is held by some teachers to be in accordance with proper method to begin with the foreign relations of one's native land and to work outward to the world-history. The European relations involved in the discovery and colonization of America furnish the only explanation to a multitude of questions that the pupil has started in the elementary school. He should move outward from what he has already learned, by the study of a new concentric circle of grounds and reasons, according to this view. This, however, is not the usual course taken. On beginning secondary history the pupil is set back face to face with the period of tradition, just when historic traces first make their appearance. He is by this arrangement broken off from the part of history that he has become acquainted with and made to grapple with that period which has no relation to his previous investigations. It is to be said, however, that general history lays stress on the religious thread of connection, though less now

than formerly. The world history is a conception of the great Christian thinker, St. Augustine, who held that the world and its history is a sort of antiphonic hymn in which God reads his counsels, and the earth and man read the responses. He induced Orosius, his pupil, to sketch a general history in the spirit of his view. It was natural that the Old Testament histories, and especially the chapters of Genesis, should furnish the most striking part of its contents. This general history was connected with religion and brought closer to the experience of the individual than the history of his own people. To commence history with the Garden of Eden, the Fall of Man, and the Noachian Deluge was to begin with what was most familiar to all minds, and most instructive, because it concerned most nearly the conduct of life. Thus religion furnished the apperceptive material by which the early portions of history were recognized, classified, and made a part of experience.

Now that studies in archæology, especially those in the Nile and Euphrates valleys, are changing the chronologies and the records of early times and adding new records of the past, bringing to light national movements and collisions of peoples, together with data by which to determine the status of their industrial civilization, their religious ideas, and the form of their literature and art, the concentric arrangement of all this material around the history of the chosen people as a nucleus is no longer possible. The question has arisen, therefore, whether general history should not be rearranged for the secondary school, and made to connect with American history for apperceptive material rather than with Old Testament history. To this it has been replied with force that the idea of a world history, as St. Augustine conceived it, is the noblest educative ideal ever connected with the subject of history. Future versions of general history will not desert this standpoint, we are told, even if they take as their basis that of ethnology and anthropology, for these, too, will exhibit a plan in human history—an educative principle that leads nations *toward* freedom and science, because the Creator of nature *has* made it, in its fundamental constitution, an evolution or

progressive development of individuality. Thus the idea of divine Providence is retained, though made more comprehensive by bringing the whole content of natural laws within his will as his method of work.

These considerations, we are reminded by the partisans of humanity studies, point back to the educative value of history as corrective of the one-sidedness of the method of science. Science seeks explanation in the mechanical conditions of, and impulses received from, the environment, while history keeps its gaze fixed on human purposes, and studies the genesis of national actions through the previous stages of feelings, convictions, and conscious ideas. In history the pupil has for his object self-activity, reaction against environment, instead of mechanism, or activity through another.

The history of English literature is another study of the secondary school. It is very properly placed beyond the elementary school, for as taught it consists largely of the biographies of men of letters. The pupils who have not yet learned any great work of literature should not be pestered with literary biography, for at that stage the greatness of the men of letters cannot be seen. Plutarch makes great biographies because he shows heroic struggles and great deeds. The heroism of artists and poets consists in sacrificing all for the sake of their creations. The majority of them come off sadly at the hands of the biographer, for the reason that the very sides of their lives are described which they had slighted and neglected for the sake of the Muses. The prophets of Israel did not live in city palaces, but in caves; they did not wear fine raiment, nor feed sumptuously, nor conform to the codes of polite society. They were no courtiers when they approached the king. They neglected all the other institutions—family, productive industry, and state—for the sake of one, the Church, and even that not the established ceremonial of the people, but a higher and more direct communing with Jehovah. So with artists and men of letters it is more or less the case that the institutional side of their lives is neglected, or unsymmetrical, or if this is not the case it will be found prosaic and

uneventful, throwing no light on their matchless productions.

For these reasons should not the present use of literary biography as it exists in secondary schools, and is gradually making its way into elementary schools, be discouraged, and the time now given to it devoted to the study of literary works of art? It will be admitted that the exposure of the foibles of artists has an immoral tendency on youth: for example, one affects to be a poet, and justifies laxity and self-indulgence through the example of Byron. Those who support this view hold that we should not dignify the immoral and defective side of life by making it a branch of study in school.

Correlation by synthesis of studies

Your Committee would mention another sense in which the expression correlation of studies is sometimes used. It is held by advocates of an artificial center of the course of study. They use, for example, De Foe's Robinson Crusoe for a reading exercise, and connect with it the lessons in geography and arithmetic. It has been pointed out by critics of this method that there is always danger of covering up the literary features of the reading matter under accessories of mathematics and natural science. If the material for other branches is to be sought for in connection with the literary exercise, it will distract the attention from the poetic unity. On the other hand, arithmetic and geography cannot be unfolded freely and comprehensively if they are to wait on the opportunities afforded in a poem or novel for their development. A correlation of this kind, instead of being a deeper correlation such as is found in all parts of human learning by the studies of the college and university, is rather a shallow and uninteresting kind of correlation that reminds one of the system of mnemonics, or artificial memory, which neglects the association of facts and events with their causes and the history of their evolution, and looks for unessential quips, puns, or accidental suggestions with a view to strengthening the memory. The effect of this is to weaken the power of systematic thinking which deals with

essential relations, and substitute for it a chaotic memory that ties together things through false and seeming relations, not of the things and events, but of the words that denote them.

The correlation of geography and arithmetic and history in and through the unity of a work of fiction is at best an artificial correlation, which will stand in the way of the true objective correlation. It is a temporary scaffolding made for school purposes. Instruction should avoid such temporary structures as much as possible, and when used they should be only used for the day, and not for the year, because of the danger of building up an apperceptive center in the child's mind that will not harmonize with the true apperceptive center required by the civilization. The story of Robinson Crusoe has intense interest to the child as a lesson in sociology, showing him the helplessness of isolated man and the re-enforcement that comes to him through society. It shows the importance of the division of labor. All children should read this book in the later years of the elementary course, and a few profitable discussions may be had in school regarding its significance. But De Foe painted in it only the side of adventure that he found in his countrymen in his epoch, England after the defeat of the Armada having taken up a career of conquest on the seas, ending by colonization and a world commerce. The liking for adventure continues to this day among all Anglo-Saxon peoples, and beyond other nationalities there is in English-speaking populations a delight in building up civilization from the very foundation. This is only, however, one phase of the Anglo-Saxon mind. Consequently the history of Crusoe is not a proper center for a year's study in school. It omits cities, governments, the world commerce, the international process, the Church, the newspaper and book from view, and they are not even reflected in it.

Your Committee would call attention in this connection to the importance of the pedagogical principle of analysis and isolation as preceding synthesis and correlation. There should be rigid isolation of the elements of each branch for the purpose of getting a clear conception of what is individual and peculiar in a

special province of learning. Otherwise one will not gain from each its special contribution to the whole. That there is some danger from the kind of correlation that essays to teach all branches in each will be apparent from this point of view.

III. THE SCHOOL PROGRAMME

In order to find a place in the elementary school for the several branches recommended in this report, it will be necessary to use economically the time allotted for the school term, which is about two hundred days, exclusive of vacations and holidays. Five days per week and five hours of actual school work or a little less per day, after excluding recesses for recreation, give about twenty-five hours per week. There should be, as far as possible, alternation of study-hours and recitations (the word recitation being used in the United States for class exercise or lesson conducted by the teacher and requiring the critical attention of the entire class). Those studies requiring the clearest thought should be taken up, as a usual thing, in the morning session, say arithmetic the second half hour of the morning and grammar the half-hour next succeeding the morning recess for recreation in the open air. By some who are anxious to prevent study at home, or at least to control its amount, it is thought advisable to place the arithmetic lesson after the grammar lesson, so that the study learned at home will be grammar instead of arithmetic. It is found by experience that if mathematical problems are taken home for solution two bad habits arise, namely, in one case, the pupil gets assistance from his parents or others, and thereby loses to some extent his own power of overcoming difficulties by brave and persistent attacks unaided by others; the other evil is a habit of consuming long hours in the preparation of a lesson that should be prepared in thirty minutes, if all the powers of mind are fresh and at command. An average child may spend three hours in the preparation of an arithmetic lesson. Indeed, in repeated efforts to solve one of the so-called "conundrums," a whole family may spend the entire evening. One of the unpleasant results of the next day is

that the teacher who conducts the lesson never knows the exact capacity and rate of progress of his pupils; in the recitation he probes the knowledge and preparation of the pupil, plus an unknown amount of preparatory work borrowed from parents and others. He even increases the length of the lessons, and requires more work at home, when the amount already exceeds the unaided capacity of the pupil.

The lessons should be arranged so as to bring in such exercises as furnish relief from intellectual tension between others that make large demands on the thinking powers. Such exercises as singing and calisthenics, writing and drawing, also reading, are of the nature of a relief from those recitations that tax the memory, critical alertness, and introspection, like arithmetic, grammar, and history.

Your Committee has not been able to agree on the question whether pupils who leave school early should have a course of study different from the course of those who are to continue on into secondary and higher work. It is contended, on the one hand, that those who leave early should have a more practical course, and that they should dispense with those studies that seem to be in the nature of preparatory work for secondary and higher education. Such studies as algebra and Latin, for example, should not be taken up unless the pupil expects to pursue the same for a sufficient time to complete the secondary course. It is replied, on the other hand, that it is best to have one course for all, because any school education is at best but an initiation for the pupil into the art of learning, and that wherever he leaves off in his school course he should continue, by the aid of the public library and home study, in the work of mastering science and literature. It is further contended that a brief course in higher studies, like Latin and algebra, instead of being useless, is of more value than any elementary studies that might replace them. The first ten lessons in algebra give the pupil the fundamental idea of the general expression of arithmetical solutions by means of letters and other symbols. Six months' study of it gives him the power to use the method in stating the manifold con-

ditions of a problem in partnership, or in ascertaining a value that depends on several transformations of the data given. It is claimed, indeed, that the first few lessons in any branch are relatively of more educational value than an equal number of subsequent lessons, because the fundamental ideas and principles of the new study are placed at the beginning. In Latin, for instance, the pupil learns in his first week's study the to him strange phenomenon of a language that performs by inflections what his own language performs by the use of prepositions and auxiliaries. He is still more surprised to find that the order of words in a sentence is altogether different in Roman usage from that to which he is accustomed. He further begins to recognize in the Latin words many roots or stems which are employed to denote immediate sensuous objects, while they have been adopted into his English tongue to signify fine shades of distinction in thought or feeling. By these three things his powers of observation in matters of language are armed, as it were, with new faculties. Nothing that he has hitherto learned in grammar is so radical and far-reaching as what he learns in his first week's study of Latin. The Latin arrangement of words in a sentence indicates a different order of mental arrangement in the process of apprehension and expression of thought. This arrangement is rendered possible by declensions. This amounts to attaching prepositions to the ends of the words, which they thus convert into adjectival or adverbial modifiers; whereas the separate prepositions of the English must indicate by their position in the sentence their grammatical relation. These observations, and the new insight into the etymology of English words having a Latin derivation, are of the nature of mental seeds which will grow and bear fruit throughout life in the better command of one's native tongue. All this will come from a very brief time devoted to Latin in school.

Amount of time for each branch

Your Committee recommends that an hour of sixty minutes each week be assigned in the programme for each of the fol-

lowing subjects throughout the eight years: physical culture, vocal music, oral lessons in natural science (hygiene to be included among the topics under this head), oral lessons in biography and general history, and that the same amount of time each week shall be devoted to drawing from the second year to the eighth inclusive; to manual training during the seventh and eighth years so as to include sewing and cookery for the girls, and work in wood and iron for the boys.

Your Committee recommends that reading be given at least one lesson each day for the entire eight years, it being understood, however, that there shall be two or more lessons each day in reading in the first and second years, in which the recitation is necessarily very short, because of the inability of the pupil to give continued close attention, and because he has little power of applying himself to the work of preparing lessons by himself. In the first three years the reading should be limited to pieces in the colloquial style, but selections from the classics of the language in prose and in poetry shall be read to the pupil from time to time, and discussions made of such features of the selections read as may interest the pupils. After the third year your Committee believes that the reading lesson should be given to selections from classic authors of English, and that the work of the recitation should be divided between (*a*) the elocution, (*b*) the grammatical peculiarities of the language, including spelling, definitions, syntactical construction, punctuation, and figures of prosody, and (*c*) the literary contents, including the main and accessory ideas, the emotions painted, the deeds described, the devices of style to produce a strong impression on the reader. Your Committee wishes to lay emphasis on the importance of the last item,—that of literary study,—which should consume more and more of the time of the recitation from grade to grade in the period from the fourth to the eighth year. In the fourth year and previously the first item—that of elocution, to secure distinct enunciation and correct pronunciation—should be most prominent. In the fifth and sixth years the second item—that of spelling, defining, and punctuation—should predominate slightly over the

other two items. In the years from the fifth to the eighth there should be some reading of entire stories, such as Gulliver's Travels, Robinson Crusoe, Rip Van Winkle, The Lady of the Lake, Hiawatha, and similar stories adapted in style and subject-matter to the capacity of the pupils. An hour should be devoted each week to conversations on the salient points of the story, its literary and ethical bearings.

Your Committee agrees in the opinion that in teaching language care should be taken that the pupil practices much in writing exercises and original compositions. At first the pupil will use only his colloquial vocabulary, but as he gains command of the technical vocabularies of geography, arithmetic, and history, and learns the higher literary vocabulary of his language, he will extend his use of words accordingly. Daily from the first year the child will prepare some lesson or portion of a lesson in writing. Your Committee has included under the head of oral grammar (from the first to the middle of the fifth year) one phase of this written work devoted to the study of the literary form and the technicalities of composition in such exercises as letter writing, written reviews of the several branches studied, reports of the oral lessons in natural science and history, paraphrases of the poems and prose literature of the readers, and finally compositions or written essays on suitable themes assigned by the teacher, but selected from the fields of knowledge studied in school. Care should be taken to criticise all paraphrases of poetry in respect to the good or bad taste shown in the choice of words; parodies should never be permitted.

It is thought by your Committee that the old style of composition writing was too formal. It was kept too far away from the other work of the pupil. Instead of giving a written account of what he had learned in arithmetic, geography, grammar, history, and natural science, the pupil attempted artificial descriptions and reflections on such subjects as "Spring," "Happiness," "Perseverance," "Friendship," or something else outside of the line of his school studies.

Your Committee has already expressed its opinion that

a good English style is not to be acquired by the study of grammar so much as by familiarity with great masterpieces of literature. We especially recommend that pupils who have taken up the fourth and fifth readers, containing the selections from great authors, should often be required to make written paraphrases of prose or poetic models of style, using their own vocabulary to express the thoughts so far as possible, and borrowing the *recherché* words and phrases of the author, where their own resources fail them. In this way the pupil learns to see what the great author has done to enrich the language and to furnish adequate means of expression for what could not be presented in words before, or at least not in so happy a manner.

Your Committee believes that every recitation is, in one aspect of it, an attempt to express the thoughts and information of the lesson in the pupil's own words, and thus an initial exercise in composition. The regular weekly written review of the important topics in the several branches studied is a more elaborate exercise in composition, the pupil endeavoring to collect what he knows and to state it systematically and in proper language. The punctuation, spelling, syntax, penmanship, choice of words, and style should not, it is true, be made a matter of criticism in connection with the other lessons, but only in the language lesson proper. But the pupil will learn language, all the same, by the written and oral recitations. The oral grammar lessons from the first year to the middle of the fifth year, should deal chiefly with the use of language, gradually introducing the grammatical technique as it is needed to describe accurately the correct forms and the usages violated.

Your Committee believes that there is some danger of wasting the time of the pupil in these oral and written language lessons in the first four years by confining the work of the pupil to the expression of ordinary commonplace ideas not related to the subjects of his other lessons, especially when the expression is confined to the colloquial vocabulary. Such training has been severely and justly condemned as teaching what is called prating or gabbling, rather than a noble use of

English speech. It is clear that the pupil should have a dignified and worthy subject of composition, and what is so good for his purpose as the themes he has tried to master in his regular lessons? The reading lessons will give matter for literary style, the geography for scientific style, and the arithmetic for a business style; for all styles should be learned.

Your Committee recommends that selected lists of words difficult to spell be made from the reading lessons and mastered by frequent writing and oral spelling during the fourth, fifth, and sixth years.

Your Committee recommends that the use of a text-book in grammar begin with the second half of the fifth year, and continue until the beginning of the study of Latin in the eighth grade, and that one daily lesson of twenty-five or thirty minutes be devoted to it.

For Latin we recommend one daily lesson of thirty minutes for the eighth year. For arithmetic we recommend number work from the first year to the eighth, one lesson each day, but the use of the text-book in number should not, in our opinion, begin until the first quarter of the third year. We recommend that the applications of elementary algebra to arithmetic, as hereinbefore explained, be substituted for pure arithmetic in the seventh and eighth years, a daily lesson being given.

Your Committee recommends that penmanship as a separate branch be taught in the first six years at least three lessons per week.

Geography, in the opinion of your Committee, should begin with oral lessons in the second year, and with a text-book in the third quarter of the third year, and be continued to the close of the sixth year with one lesson each day, and in the seventh and eighth years with three lessons per week.

History of the United States with the use of a text-book, your Committee recommends for the seventh and the first half of the eighth year, one lesson each day; the Constitution of the United States for the third quarter of the eighth year.

The following schedule will show the number of lessons per *week for* each quarter of each year:

Reading. Eight years, with daily lessons.

Penmanship. Six years, ten lessons per week for first two years, five for third and fourth, and three for fifth and sixth.

Spelling Lists. Fourth, fifth, and sixth years, four lessons per week.

Grammar. Oral, with composition or dictation, first year to middle of fifth year, text-book from middle of fifth year to close of seventh year, five lessons per week. (Composition writing should be included under this head. But the written examinations on the several branches should be counted under the head of composition work.)

Latin or French or German. Eighth year, five lessons per week.

Arithmetic. Oral first and second year, text-book third to sixth year, five lessons per week.

Algebra. Seventh and eighth year, five lessons per week.

Geography. Oral lessons second year to middle of third year, text-book from middle of third year, five lessons weekly to seventh year, and three lessons to close of eighth.

Natural Science and Hygiene. Sixty minutes per week, eight years.

History of United States. Five hours per week seventh year and first half of eighth year.

Constitution of United States. Third quarter in the eighth year.

General History and Biography. Oral lessons, sixty minutes a week, eight years.

Physical Culture. Sixty minutes a week, eight years.

Vocal Music. Sixty minutes a week, eight years.

Drawing. Sixty minutes a week, eight years.

Manual Training, Sewing and Cooking. One-half day each week in seventh and eighth years.

Your Committee recommends recitations of fifteen minutes in length in the first and second years, of twenty minutes in length in the third and fourth years, of twenty-five minutes in the fifth and sixth years, and of thirty minutes in the seventh and eighth.

The results of this programme show for the first and second years twenty lessons a week of fifteen minutes each, besides seven other exercises occupying an average of twelve minutes apiece each day; the total amount of time occupied in the continuous attention of the recitation or class exercises being twelve hours, or an average of two hours and twenty-four minutes per day.

For the third year twenty lessons a week of twenty minutes each, and five general exercises taking up five hours a week or an average of one hour per day, giving an average time per day of two hours and twenty minutes for class recitations or exercises.

In the fourth the recitations increase to twenty-four (by reason of four extra lessons in spelling) and the time occupied

in recitations and exercises to thirteen hours and an average per day of two hours thirty-six minutes.

BRANCHES	1st year	2d year	3d year	4th year	5th year	6th year	7th year	8th year
Reading.....	10 lessons a week		5 lessons a week					
Writing.....	10 lessons a week		5 lessons a week		3 lessons a week			
Spelling lists...				4 lessons a week				
English Grammar	Oral, with composition lessons					5 lessons a week with text-book		
Latin.....								5 lessons
Arithmetic....	Oral, 60 minutes a week		5 lessons a week with text-book					
Algebra.....							5 lessons a week	
Geography.....	Oral, 60 minutes a week		*5 lessons a week with text-book				3 lessons a week	
Natural Science + Hygiene.	Sixty minutes a week							
U. S. History..							5 lessons a week	
U. S. Constitution								*5 les.
General History	Oral, sixty minutes a week							
Physical Culture	Sixty minutes a week							
Vocal Music...	Sixty minutes a week divided into 4 lessons							
Drawing	Sixty minutes a week							
Manual Train. or Sewing + Cookery.							One-half day each	
No. of Lessons	20+7 daily exer.	20+7 daily exer.	20+5 daily exer.	24+5 daily exer.	27+5 daily exer.	27+5 daily exer.	23+6 daily exer.	23+6 daily exer.
Total Hours of Recitations	12	12	11⅔	13	16¼	16¼	17½	17½
Length of Recitions	15 min.	15 min.	20 min.	20 min.	25 min.	25 min.	30 min.	30 min.

* Begins in second half year

In the fifth and sixth years the number of recitations increases to twenty-seven per week, owing to the addition of

formal grammar, and the total number of hours required for all is 16¼ per week, or an average of 3¼ per day.

In the seventh and eighth years the number of lessons decreases to twenty-three, history being added, penmanship and special lessons in spelling discontinued, the time devoted to geography reduced to three lessons a week. But the recitation is increased to thirty minutes in length. Manual training occupies a half-day, or 2½ hours, each week. The total is 19 hours per week or 3¾ per day.

The foregoing tabular exhibit shows all of these particulars.

IV. METHODS AND ORGANIZATION

Your Committee is agreed that the time devoted to the elementary school work should not be reduced from eight years, but they have recommended, as hereinbefore stated, that in the seventh and eighth years a modified form of algebra be introduced in place of advanced arithmetic, and that in the eighth year English grammar yield place to Latin. This makes, in their opinion, a proper transition to the studies of the secondary school and is calculated to assist the pupil materially in his preparation for that work. Hitherto, the change from the work of the elementary school has been too abrupt, the pupil beginning three formal studies at once, namely algebra, physical geography, and Latin.

Your Committee has found it necessary to discuss the question of methods of teaching in numerous instances, while considering the question of educational values and programmes, because the value and time of beginning of the several branches depends so largely on the method of teaching.

The following recommendations, however, remain for this part of their report:

They would recommend that the specialization of teachers' work should not be attempted before the seventh or eighth year of the elementary school and in not more than one or two studies then. In the secondary school it is expected that a teacher will teach one or at most two branches. In the elementary school, for at least six years, it is better, on the whole,

to have each teacher instruct his pupils in all the branches that they study, for the reason that only in this way can he hold an even pressure on the requirements of work, correlating it in such a manner that no one study absorbs undue attention. In this way the pupils prepare all their lessons under the direct supervision of the same teacher, and by their recitations show what defects of methods of study there have been in the preparation.

The ethical training is much more successful under this plan, because the personal influence of a teacher is much greater when he or she knows minutely the entire scope of the school work. In the case of the special teacher the responsibility is divided and the opportunities of special aquaintance with character and habits diminished.

With one teacher, who supervises the study and hears all the recitations, there is a much better opportunity to cultivate the two kinds of attention. The teacher divides his pupils into two classes and hears one recite while the other class prepares for the next lesson. The pupils reciting are required to pay strict attention to the one of their number who is explaining the point assigned him by the teacher—they are to be on the alert to notice any mistakes of statement or omissions of important data, they are at the same time to pay close attention to the remarks of the teacher. This is one kind of attention, which may be called associated critical attention. The pupils engaged in the preparation of the next lesson are busy, each one by himself, studying the book and mastering its facts and ideas, and comparing them one with another, and making the effort to become oblivious of their fellow-pupils, the recitation going on, and the teacher. This is another kind of attention, which is not associated, but an individual effort to master for one's self without aid a prescribed task and to resist all distracting influences. These two disciplines in attention are the best formal training that the school affords.

Your Committee has already mentioned a species of faulty correlation wherein the attempt is made to study all branches *in* each, misapplying Jacotot's maxim, "all is in all" (*tout est dans tout*).

A frequent error of this kind is the practice of making every recitation a language lesson, and interrupting the arithmetic, geography, history, literature, or whatever it may be, by calling the pupil's attention abruptly to something in his forms of expression, his pronunciation, or to some faulty use of English; thus turning the entire system of school work into a series of grammar exercises and weakening the power of continuous thought on the objective contents of the several branches, by creating a pernicious habit of self-consciousness in the matter of verbal expression. While your Committee would not venture to say that there should not be some degree of attention to the verbal expression in all lessons, it is of the opinion that it should be limited to criticism of the recitation for its want of technical accuracy. The technical words in each branch should be discussed until the pupil is familiar with their full force. The faulty English should be criticised as showing confusion of thought or memory, and should be corrected in this sense. But solecisms of speech should be silently noted by the teacher for discussion in the regular language lesson.

The question of promotion of pupils has occupied from time to time very much attention. Your Committee believes that in many systems of elementary schools, there is injury done by too much formality in ascertaining whether the pupils of a given class have completed the work up to a given arbitrarily fixed point, and are ready to take up the next apportionment of the work. In the early days of city school systems, when the office of superintendent was first created, it was thought necessary to divide up the graded course of study into years of work, and to hold stated annual examinations to ascertain how many pupils could be promoted to the next grade or year's work. All that failed at this examination were set back at the beginning of the year's work to spend another year in reviewing it. This was to meet the convenience of the superintendent who, it was said, could not hold examinations to suit the wants of individuals or particular classes. From this arrangement there naturally resulted a great deal of what is called "marking time." Pupils who had nearly completed the work of

the year were placed with pupils who had been till now a year's interval below them. Discouragement and demoralization at the thought of taking up again a course of lessons learned once before caused many pupils to leave school prematurely.

This evil has been remedied in nearly one-half of the cities by promoting pupils whenever they have completed the work of a grade. The constant tendency of classification to become imperfect by reason of the difference in rates of advancement of the several pupils, owing to disparity in ages, degree of maturity, temperament, and health, makes frequent reclassification necessary. This is easily accomplished by promoting the few pupils who distance the majority of their classmates into the next class above, separated as it is or ought to be, by an interval of less than half a year. The bright pupils thus promoted have to struggle to make up the ground covered in the interval between the two classes, but they are nearly always able to accomplish this, and generally will in two years' time need another promotion from class to class.

The procrustean character of the old city systems has been removed by this device.

There remain for mention some other evils besides bad systems of promotion due to defects of organization. The school buildings are often with superstitious care kept apart exclusively for particular grades of pupils. The central building erected for high school purposes, though only half filled, is not made to relieve the neighboring grammar school, crowded to such a degree that it cannot receive the classes which ought to be promoted from the primary schools. It has happened in such cases that this superstition prevailed so far that the pupils in the primary school building were kept at work on studies already finished, because they could not be transferred to the grammar school.

In all good school systems the pupils take up new work when they have completed the old, and the bright pupils are transferred to higher classes when they have so far distanced their fellows that the amount of work fixed for the average *ability* of the class does not give them enough to do.

In conclusion your Committee would state, by way of explanation, that it has been led into many digressions, in illustrating the details of its recommendations in this report, through its desire to make clear the grounds on which it has based its conclusions and through the hope that such details will call out a still more thorough-going discussion of the educational values of branches proposed for elementary schools, and of the methods by which those branches may be successfully taught.

With a view to increase the interest in this subject your Committee recommends the publication of selected passages from the papers sent in by invited auxiliary committees and by volunteers, many of these containing valuable suggestions not mentioned in this report.

WILLIAM T. HARRIS, *Chairman*

United States Commissioner of Education, Washington, D. C.

I dissent from the majority report of the Committee in regard to the following points:

Arithmetic

1. *As to fractions:* In teaching arithmetic there does not exist any greater difficulty in getting small children to grasp the nature of the fraction as such than in getting them to grasp the idea of the simpler whole numbers. It is true that the fractions ½, ⅓, ¼, etc., as symbols, are a little more complex than are the single digits; but as to the real meaning, when once the fractional idea has been properly developed by the teacher and the significance of the idea apprehended by the pupil, it is as easily understood as any other simple truth. Children get the idea of *half*, *third*, or *quarter* of many things long before they enter school, and they will as readily learn to add, subtract, multiply, and divide fractions as they will whole numbers. In using fractions they will draw diagrams and pictures representing the processes of work as quickly and easily as they illustrate

similar work with integers. It is of course assumed that the teacher knows how to teach arithmetic to children, or rather, how to teach the children how to teach themselves. There is really no valid argument why children in the second, third, and fourth years in school should not master the fundamental operations in fractions. Not only this, they will put the more common fractions into the technique of percentage, and do this as well in the second and third grades as at any other time in their future progress. There is only one new idea involved in this operation, and that consists in giving an additional term—per cent.—to the fractional symbol. When one number is a part of another, it may be regarded as a fractional part or as such a per cent. of it. A great deal of percentage is thus learned by the pupils early in the course. Children are not hurt by learning. Standing still and lost motion kill.

Every recitation should reach the full swing of the learner's mind, including all his acquisitions on any given topic. But if the teaching of fractions be deferred, as it usually is in most schools, the time may be materially shortened by teaching addition and subtraction of fractions together. This is simple enough if different fractions having common denominators are used at first, such as $\frac{2}{5} + \frac{1}{5} = ?$, and $\frac{2}{5} - \frac{1}{5} = ?$ Then the next step, after sufficient drill on this case, is to take two fractions (simple) of different units of value, as $\frac{1}{2} + \frac{1}{3} = ?$, and $\frac{1}{2} - \frac{1}{3} = ?$ Multiplication and division may be treated similarly.

In decimals, the pupil is really confronted by a simpler form of fractions than the varied forms of common fractions. Devices and illustrations of a material kind are necessary to build up in the pupil's mind at the beginning a clear concept of a tenth, etc., etc., and then to show that *one-tenth* written as a decimal is only a shorthand way of writing $\frac{1}{10}$ as a common fraction, and so on. He sees very soon that the decimal is only a shorthand common fraction, and this notion *he* must hold to. This is the vital point in decimals. The *idea* that they can be changed into common fractions and

the reverse at will, establishes the fact in the pupil's mind that they are common fractions and not uncommon ones. Fixing the decimal point will, in a short time, take care of itself.

In teaching arithmetic the steps are: (1) developing the subject till each pupil gets a clear conception of it; (2) necessary drill to fix the process; (3) connecting the subject with all that has preceded it; (4) its applications; (5) the pupil's ability to sum up clearly and concisely what he has learned.

2. As to abridgment: Under this head, I hold that a course in arithmetic, including simple numbers, fractions, tables of weights and measures, percentage and interest, and numerical operations in powers, does not fit a pupil to begin the study of algebra. That while he may carry the book under his arm to the schoolroom, he is too poorly equipped to make headway on this subject, and instead of finishing up algebra in a reasonable length of time he is kept too long at it, with a strong probability of his becoming disgusted with it.

There are subjects, however, in the common school arithmetic that may be dropped out with great advantage, to wit, all but the simplest exercises in compound interest, foreign exchange, all foreign moneys (except reference tables of values), annuities, alligation, progression; and the entire subjects of percentage and interest should be condensed into about twenty pages.

Cancellation, factoring, proportion, evolution, and involution should be retained. Cancellation and factoring should be strongly emphasized owing to their immense value in shortening work in arithmetic, algebra, and in more advanced subjects. Some drill in the Metric System should not be omitted.

3. As to mental arithmetic: Till the end of the fourth year the pupil does not need a text-book of mental arithmetic. So far his work in arithmetic should be about equally divided between written and mental. At the beginning of the fifth year, in addition to his written arithmetic, he should begin a

mental arithmetic and continue it three years, reciting at least four mental arithmetic lessons each week. The length of the recitation should be twenty minutes. A pupil well drilled in mental arithmetic at the end of the seventh year, if the school age begins at six, is far better prepared to study algebra than the one who has not had such a drill. There are a few problems in arithmetic that can be solved more easily by algebra than by the ordinary processes of arithmetic, but there are many numerical problems in equations of the first degree that can be more easily handled by mental arithmetic than by algebra. To attack arithmetical problems by algebra is very much like using a tremendous lever to lift a feather. Those who have found a great stumbling-block in arithmetical "conundrums," have, if the inside facts were known, been looking in the wrong direction. A deficiency of "number-brain-cells" will afford an adequate explanation.

4. Rearrangement of subjects: There should be a rearranging of the topics in arithmetic so that one subject naturally leads up to the next. As an illustration, it is easily seen that whole numbers and fractions can be treated together, and that with United States money, when the *dime* is reached, is the proper time to begin decimals, and that when "a square" in surface measure first comes up, the next step is the *square* of a number as well as its *square root*, and that solid measure logically lands the learner among cubes and cube-roots. When he learns that 1728 cubic inches make one cubic foot he is prepared to find the edge of the cube. What is meant here is pointing the way to the next above. All depends upon the teacher's ability to lead the pupil to see conditions and relations. My contention is that truth, so far as one is capable of taking hold of it when it is properly presented, is always a simple affair.

5. As to algebra: If algebra be commenced at the middle of the seventh year, let the pupil go at it in earnest, and keep at it till he has mastered it. Here the best opportunities will be afforded him to connect his algebraic knowledge to his arithmetical knowledge. He builds the one on top of the other.

The skillful teacher always insists that the learner shall establish and maintain this relationship between the two subjects. To switch around the other way appears to me to be the same as to omit certain exercises in the common algebra, because they are more briefly and elegantly treated in the calculus. It is admitted that a higher branch of mathematics often throws much light on the lower branches, but these side-lights should be employed for the purpose of leading the learner onward to broader generalizations. Unless one sees the lower clearly, the higher is obscure. Build solidly the foundation on arithmetic—written and mental—and the higher branches will be more easily mastered and time saved.

History of the United States

In teaching this branch in the public schools, there does not appear, so far as I can see, any substantial reason why the pupils should not study and recite the history of the Rebellion in the same manner that they do the Revolutionary War. The pupils discuss the late war and the causes that led to it with an impartiality of feeling that speaks more for their good sense and clear judgment than any other way by which their knowledge can be tested. They may not get hold of all the causes involved in that conflict, but they get enough to understand the motives which caused the armies to fight so heroically, and why the people, both North and South, staked everything on the issue. Just as the men who faced each other for four years and met so often in a death grapple will sit down now and quietly talk over their trials, sufferings, and conflicts, so do their children talk over these same stirring scenes. They, too, so far as my experience extends, are singularly free from bitterness and prejudice. It is certainly a period of history that they should study.

The spelling-book

In addition to the "spelling-lists," I would supplement with a good spelling-book. So far, no "word-list," however

well selected, has supplied the place of a spelling-book. All those schools that threw out the spelling-book and undertook to teach spelling incidentally or by word-lists failed, and for the same reason that grammar, arithmetic, geography, and other branches, cannot be taught incidentally as the pupil or the class reads Robinson Crusoe, or any other similar work. It is an independent study and as such should be pursued.

JAMES M. GREENWOOD,
Superintendent of Schools, Kansas City, Mo.

While affixing my signature to the report of this Committee as expressing substantial agreement with most of its leading propositions, I beg leave also to indicate my dissent from certain of its recommendations and to suggest certain additions which, in my judgment, the report requires.

1. There are other forms of true correlation which should be included with the four mentioned in the first part of the report and which should be as clearly and fully treated as are these four.

The first is that form of correlation which is popularly understood by the name, and which is also called by some writers, concentration, co-ordination, unification, and alludes in general to a division of studies into content and form; by content meaning that upon which it is fitting that the mind of the child should dwell, and by form the means or modes of expression by which thoughts are communicated. Or, it may be thus expressed: The true content of education is, (1), philosophy or the knowledge of man as to his motives and hidden springs of action indicated in history and literature, and (2), science, the knowledge of nature and its manifestations and laws. Its form is art, which is the deliberate, purposeful, and effective expression to others of that which has been produced within man by contact with other men and with nature, and is commonly referred to as divided into various arts, such as reading, writing, drawing, making, and modeling. The relation of content and form is that of principle and subordinate, the

latter receiving its chief value from the former. In a true education they are so presented to the mind of the child that he instinctively and unconsciously grasps this relation and is thereby lifted into a higher plane of thinking and living than if the various arts are taught, as they too commonly are, without reference to a noble content. This relation of form to content is vaguely referred to in the report, but nowhere definitely treated. It seems to me that it is a true form of correlation, and, as such, deserves special and definite treatment. Moreover, it is at present much in the minds of the teachers of this country, often in forms that are misleading and harmful. The fact that it adds the important element of interest to the dry details of common school life makes it especially attractive to progressive and earnest teachers, and this Committee should recognize its importance and make such an utterance upon it as will guide the average teacher to a clear comprehension of its meaning and to a wise use of it in the schoolroom.

Second, there is a still higher form of correlation which is definitely referred to later in the report as that "of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization." This in the report is assigned absolutely to the province of higher education. While I do not wish to dissent wholly from this view, since it is doubtless true that this higher unity cannot be comprehensively stated for the use of a child, yet a wise teacher can so present subjects to even a young child that a sense of the unity of all knowledge will, to a certain degree, be unconsciously developed in his mind. In regard to certain of the great divisions of human knowledge, this relation is so evident that they cannot be properly presented at all unless the relation be made clear. Such studies are history and geography.

2. The recommendations upon the subject of language should be broadened to cover the production of good English by the child himself, with the suggestion of suitable topics and proper methods. This report confines itself to the absorptive side of education and ignores that development of power over

nature, man, and self, which comes from free exercise of faculties and free expression of thought. The study of language as something for the child to use himself, the great means by which he is to assert his place in civilization, and exert his influence for good, is nowhere referred to except in the vaguest way. This statement in regard to language applies almost equally well to drawing, and here is made evident the importance of the form of correlation to which I have just referred. The proper material for the training of the child in expression is that which is furnished by the study of man and nature. His mind being filled with high themes, he asserts his individuality, expresses himself in regard to them, and thereby gains at once both a closer and clearer comprehension of what he has studied, and also the power by which he may become a factor in his generation.

3. I would wish to omit the word "weekly" where it occurs in the discussion of the subjects of general history and science, unless it be understood to mean that an amount of time in the school year equivalent to sixty minutes weekly be given to each of these subjects. It is often better to condense these studies into certain portions of the year, giving more time to them each week and using them as the basis, to a certain degree, of language work. I believe that, especially with young children, clearer concepts are produced by such connected study, pursued for fewer weeks, than by lessons seven days apart.

4. In my judgment manual training should not be limited to the seventh and eighth grades, but should begin in the kindergarten with the simple study of form from objects and the reproduction in paper of the objects presented, and should extend, in a series of carefully graded lessons, through all the grades, leaving, however, the heavier tools, such as the plane, for the seventh and eighth grades. By these means an interest is kept up in the various human industries, sympathy for all labor is created, and a certain degree of skill is developed; moreover the interest of the pupils in their school is greatly enhanced. Manual training has often proved the magnet by

which boys at the restless age have been kept in school instead of leaving for some gainful occupation.

5. I desire to suggest that geometry may be so taught as to be a better mathematical study than algebra to succeed or accompany arithmetic in the seventh and eighth grades. I do not refer particularly to inventional geometry, to which the Committee accords a slighting attention, but to constructive geometry and the simplest propositions in demonstrative geometry, thus involving the comprehension of the elementary geometric forms and their more obvious relations. This study may be made of especial interest in connection with manual training and drawing, while it presents fewer difficulties to the immature mind than the abstractions of algebra, since it connects more directly with the concrete, by which its presentation may often be aided.

6. While agreeing fully with the majority of the Committee that the full scientific method should not be applied to the study of elementary science by young children, yet I am compelled to favor more of experimentation and observation by the child, and less of telling by the teacher than the report would seem to favor.

7. I would go farther than the majority of the Committee, and insist that, except in rare cases, there should be no specialization of the teaching force below the High School, and that even in the first years of the High School, so far as possible, specialization should be subordinated to a general care of the child's welfare and oversight of his methods of study, which are impossible when a corps of teachers give instruction, each in one subject, and see the student only during the hour of recitation.

8. While in the main I agree with the bald statements under the head "Correlation by synthesis of studies," since reference is made to only a very artificial mode of synthesis not at all in vogue in this country, I must dissent emphatically from this portion of the report as by inference condemning a most important department of correlation, to which I have referred earlier. The doctrine of concentration is not necessarily arti-

ficial; rather it refers to the higher unity, of which this Committee has spoken in glowing terms as belonging to the province of higher education. It also includes the division of the school curriculum into content and form, which this Committee inferentially adopts in its treatment of language. I do not believe, any more than do the majority of the Committee, that the entire course of study can be literally and exactly centered about a single subject, nor do I believe in any artificial correlation; but there is a natural relation of all knowledges, which this Committee admits in various places, and which is the basis of a proper synthesis of studies, according to the psychological principal of apperception.

9. If by the term "oral," as applied to lessons in biography and in natural science, the Committee means, as the word would imply, that the instruction is to be given in the form of lectures by the teacher, I cannot in full agree with the Committee's conclusions. As I have already stated, in natural science the work should be largely that of observation, and in history and biography, while in the very lowest grades the teachers should tell the children stories, as soon as it is possible the desired information should be obtained by the student through reading. To this end the reading lesson in school should be properly correlated with his other studies, and he should be advised as to his home reading. The information thus obtained should be the subject of conversation in the class, and should furnish the material for much of the written language work of the children.

10. I must dissent emphatically and entirely from that portion of the report which recommends that a text-book in grammar be introduced into the fifth year of the child's school life. It is a question in my mind whether it would not be better if the text-book were not introduced into the grades below the High School at all. Certainly it should not appear before the seventh year. Such knowledge of grammar as will familiarize the child with the structure of the sentence, the basis of all language, and as will enable him to use correctly forms of speech which the necessities of expression require,

should be given orally by the teacher in connection with the child's written work, when needed; but against the introduction of a text-book upon grammar, the most abstruse of all the subjects of the school curriculum, when the pupil is not more than ten years old, I must protest. Instead of that the child should devote much time, some every day, to writing upon proper themes in the best English he can command, furnishing occasion to the teacher to correct such errors as he may make, and acquiring by use acquaintance with the correct forms of grammar. If, as will doubtless be the case in most cities, local conditions render the introduction of Latin into the eighth grade inadvisable, this study of grammar may be made in that grade somewhat more intensive.

11. If by a text-book in geography is meant that which is commonly understood by the term, and not simply geographical reading matter, in my judgment, it should not be introduced earlier than the fifth year.

These suggestions and expressions of dissent, if approved by the Committee, would necessitate some change in the programme submitted, the most important of which would be the making room for the production of English in the grades. This could be provided in the first and second grades by taking some of the time devoted to penmanship and doing the work partly in connection with the reading classes. In the third and fourth grades it should take some of the time devoted to penmanship and should be studied also in connection with geography and reading, and in the fifth and sixth grades it should take all of the time given to grammar.

I regret to be compelled to express dissent upon so many points, but as most of them appear to me vital and as the differences appear to be not merely superficial but fundamental, affecting and affected by one's entire educational creed, I cannot do otherwise. To most of the report I most gladly give my assent and approval.

CHARLES B. GILBERT,
Superintendent of Schools, St. Paul, Minn.

I agree most heartily with the main features of the foregoing report of the sub-committee on correlation of studies It is so admirable in its analysis of subjects and in its statement of comparative education values, and so suggestive in its practical applications to teaching, that I regret to find myself appearing in any way to dissent from its conclusions. Indeed my principal objection is not against anything contained in the report (unless it be against a possible inference which might be drawn at one point), but it refers rather to what seems to me to be an omission.

In addition to all the forms of correlation recommended in the report, it seems to me possible to make a correlation of subjects in a programme in such way that the selection of subject-matter may be to some extent from all fields of knowledge. These selections should be such as are related to one another so as to be mutually helpful in acquisition. They should be the main features of knowledge in the different departments.

These different departments from which the chosen subjects should be taken must be fundamental ones and must be sufficiently numerous to represent universal culture. The report itself indicates conclusively what these are.

Reference is made in the report to various attempts that have been made to correlate subjects of study.

A very just criticism is made upon that attempt at correlation by the use of the story of Robinson Crusoe as a center of correlation. It is distinctly pointed out in the report that the experiences of Robinson Crusoe are lacking in many of the elements of universal culture, and in many elements of education needed to adjust the individual properly to the civilization of our time and country. It is equally evident that the attempt to make this story the center of correlation leads directly to trivial exercises in other subjects in order to make them "correlate" with Robinson Crusoe. It is also shown in the report that it naturally leads to fragmentary knowledge of many subjects very much inferior to that clear, logically connected knowledge of a subject which may be had by *pursuing* it without reference to correlating it with all others.

It is at this point that in my judgment a wrong inference is permitted by the report.

It does not, as it seems to me, follow that, because correlation based on Robinson Crusoe is a failure, all correlations having the same general purpose will necessarily prove failures. For my own part I do not believe that correlation needs any "center," outside the child and its natural activities. If, however, it seems wiser to give special prominence to any given field of acquisition, it should, in my judgment, be accorded to language and its closely related subjects— reading, spelling, writing, composing, study of literature, etc., etc. Indeed language as a mode of expression is organically related to thinking, in all fields of knowledge, as form is related to content. A "system" or "programme" of correlation on this basis would seek for fundamental ideas in all the leading branches and make them themes of thought and occasions of language exercises. The selections would omit all trivialities in all subjects, and would not attempt to correlate for the mere sake of correlation; but would seek to correlate wherever by such correlation kindred themes may be made to illuminate one another. To illustrate, concrete problems in arithmetic would be sought that would clearly develop and illustrate mathematical ideas and their application; but in a secondary way these problems would be sought for in the various departments of concrete knowledge— geography, history, physics, chemistry, astronomy, meteorology, political, industrial, or domestic economy. But none of these themes would be so relied upon for problems as to compel one to choose unreasonable or trivial relations on which to base them. The problems themselves should represent true and important facts and relations of the other subjects as surely and rigidly as they should involve correct mathematical principles; and all such exercises should be rightly related to the child's education in language.

In like manner, when a child is engaged in nature study of any kind, some valuable problems in mathematics may be found rightly related both to the subject directly in hand and

the child's natural progress in arithmetic. Also many of the lessons in nature study are directly related to some of the finest literature ever produced, in which analogies of nature are made the means of expression for the finest and most delicate of the human experiences. When the child has mastered the physical facts on which the literary inspiration is based is the true time to give him the advantage of the study of such literature. These ideas are not only rightly related to one another, but to the mind itself. It is, so to speak, the nascent moment when the mind can easily and fully master what might else remain an impenetrable mystery; and all because subjects and occasion have come into happy conjunction.

This is not the place in which to attempt any elaboration of such a system of correlation. But I feel that its absence from the report may make many persons feel that the latter. is so far incomplete.

L. H. JONES,
Superintendent of Schools, Cleveland, O.

With the main lines of thought in this report I find myself in agreement. With many of its details, however, I am not in accord. I regret to have to express my dissent from its conclusions in the following particulars:

1. The report makes too little of the uses of grammar as supplying canons of criticism which enable the pupil to correct his own English, and as furnishing a key (grammatical analysis) that gives him the power to see the meaning of obscure or involved sentences.

2. For the study of literature, complete works are to be preferred to the selections found in school readers.

3. That species of language exercise known as paraphrasing I regard as harmful.

4. The study of number should not be omitted from the first year in school. Practice in the primary operations of arithmetic should not be omitted from the seventh and eighth years. The quadratic equation should be reserved for the *High* School.

5. The foreign language introduced into the elementary school course should be a modern language—French or German. Latin should be reserved for those who have time and opportunity to master its literature.

6. In the general programme of studies, the school day is cut up into too many short periods. The tendency of such a programme as that in the text would be to destroy repose of mind and render reflection almost an impossibility.

7. I desire to express my agreement with the opinions stated in Sections 2, 3, 6, and 9 of Mr. Gilbert's dissenting opinion; and, in the main, with what Mr. Jones says on the correlation of studies.

WILLIAM H. MAXWELL,
Superintendent of Schools, Brooklyn, N. Y.

III

REPORT OF THE

SUB-COMMITTEE ON THE ORGANIZATION OF CITY SCHOOL SYSTEMS

It is understood that the Committee is to treat of city school systems which are so large that persons chosen by the people to manage them, and serving without pay, cannot be expected to transact all the business of the system in person, nor to have personal knowledge of all business transactions; and which are also so large that one person employed to supervise the instruction cannot be assumed to personally manage or direct all of the details thereof; but must, in each case, act under plans of organization and administration established by law, and through assistants or representatives.

The end for which a school system exists is the *instruction of the children*, the word instruction being used with the meaning it attains in the mind of a well-educated person, if not in the mind of an educational expert.

To secure this end, no plan of organization alone will suffice. Nothing can take the place of a sincere desire for good schools, of a fair knowledge of what good schools are and of what will make them, of a public spirit and a moral sense on the part of the people, which are spontaneous or which can be appealed to with confidence. Fortunately the interest which the people have in their own children is so large, and the anxiety of the community for public order and security is so great, that public sentiment may ordinarily be relied upon, or may be aroused to action, to choose proper representatives and take proper measures for the administration of the schools. If, in any case, this is not so, there is little hope of efficient schools. Wherever it *is* so, it alone will not suffice; but proper organization may become the instrument of public

sentiment and develop schools that will be equal to the needs of all and become the safeguards of citizenship.

Efficient schools can be secured only by providing suitable buildings and appliances and by keeping them in proper order, on the one hand, and, on the other hand, by employing, organizing, aiding, and directing teachers so that the instruction shall have life and power to accomplish the great end for which schools are maintained.

The circumstances of the case naturally and quickly separate the duties of administration into two great departments: one which manages the business affairs, and the other which supervises the instruction. The business affairs of the school system may be transacted by any citizens of common honesty, correct purposes, and of good business experience and sagacity. The instruction will be ineffective and abnormally expensive unless put upon a scientific educational basis and supervised by competent educational experts.

There will be a waste of money and effort, and a lack of results, unless the authorities of these two departments are sympathetic with each other; that is, unless, on the one hand, the business management is sound, is appreciative of good teaching, looks upon it as a scientific and professional employment, and is alert to sustain it; and unless, on the other hand, the instructors are competent and self-respecting, know what good business management is, are glad to uphold it, and are able to respect those who are charged with responsibility for it.

To secure efficiency in these departments, there must be adequate authority and quick public accountability. The problem is not merely to secure some good schoolhouses, but good schoolhouses wherever needed, and to avoid the use of all houses which are not suitable; it is not to get some good teaching, but to prevent all bad teaching and to advance all the teaching to the highest possible point of special training, of professional spirit, and of life-giving power. All of the business matters must be intrusted to competent business hands and managed upon sound business principles; and all of the instruction must be put upon a professional basis. To

insure this, there must be deliberation and wisdom in determining policy, and then the power to do what is determined upon must be present and capable of exercise, and the responsibility for the proper exercise of the power must, in each case, be individual and immediate.

It is imperative that we discriminate between the legislative and the executive action in organizing and administering the schools. The influences which enter into legislative action looking to the general organization and work of the schools must necessarily and fundamentally flow directly from the people and be widely spread. The greater the number of people, in proportion to the entire population, who can be led to take a positive interest and an active part in securing good schools the better will the schools be, provided the people can secure the complete execution of their purposes and plans. But experience has clearly shown that many causes intervene to prevent the complete execution of such plans; that all the natural enemies of sound administration scent plenty of plunder and are especially active here; that good school administration requires much strength of character, much business experience, much technical knowledge, and can be measurably satisfactory only when the responsibility is adequate and the penalties for maladministration are severe. Decentralization in making the plan and determining what shall be done, and centralization in executing the plan and in doing what is to be done, are perhaps equally important.

It should be remembered that the character of the school work of a city is not merely a matter of local interest, and that the maintenance of the schools does not rest merely or mainly upon local authority. The people of the municipality, acting, and ordinarily glad to act, but in any event being required to act, under and pursuant to the law which has been ordained by the sovereign authority of the State, establish and maintain schools. They must have the taxing power which the State alone possseses in order to enable them to proceed at all. They must regard the directions which the State sees fit to give as to the essential character of the schools, when it exer-

cises in their behalf, or when it delegates to them, the power of taxation.

The plan should be flexible for good while inflexible for evil. After meeting essential requirements, the people of the municipality may and should be empowered to proceed as much farther as they will in elaborating a system of schools. The higher the plane of average intelligence, and the more generally and the more directly the people act in deciding what shall be done, and the greater the facility and completeness with which the intelligence of the city is able to secure the proper execution of its plans by officers appointed for that purpose, the more elaborate and the more efficient will be the schools.

It is idle to suggest that centering executive functions is unwisely taking power away from the people. The people cannot execute plans themselves. The authority to do so must necessarily be delegated. The question simply is: Shall it be given to a number of persons, and, if so, to how many? Or, to only one? This question is to be decided by experience, and it is of course true that experience has not been uniform. But it is doubtless true that the general experience of the communities of the country has shown that where purely executive functions are conferred upon a number of persons, jointly, they yield to antagonistic influences and shift the responsibility from one to another; and that centering the responsibility for the proper discharge of executive duties upon a single person, who gets the credit of good work and must bear the disgrace or penalty of bad work, and who can quickly be held accountable for misdeeds and inefficiency, has secured the fullest execution of public plans and the largest results. To call this "centralization," with the meaning which commonly attaches to the word, is inaccurate. Instead of removing the power from the people, it is keeping the power closer to the people and making it possible for the citizen, in his individual capacity, and for organized bodies of citizens, to secure the execution of plans according to the purpose and intent with which those plans were made. Indeed it is safe to say that experience has shown that it is *the only way* in which to pre-

vent the frequent thwarting of the popular will and the defiance of individuals whose interests are ignored or whose rights are invaded.

So much, it seems to us, is strongly supported both by reason and by experience, and is clearly manifest.

But all the people of a city whose population is numbered by hundreds of thousands or millions cannot meet in a legislative assemblage to formulate plans for school government, any more than they can all meet to make plans for municipal government. They cannot even gather in mass meetings, and, if they could, mass meetings cannot deliberate. Even their legislative action must flow not from a primary but from a representative assembly.

What shall such a representative legislative body be called? How shall it be chosen? Of how many members shall it be composed? And what shall be its powers? These and other similar questions are all-important and must be determined by the law-making power of the State. The sentiments of the city, as expressed through the local organizations and particularly through the newspapers, must of course have much weight with the legislature if there is anything like unanimity or any very strong preponderance of opinion in the city; for the plan for which a community expresses a preference will surely be likely to operate most effectually in that community. But the local sentiment is not conclusive. When divided, it is no guide at all. The legislature is to take all the circumstances into consideration, take the world's experience for its guide, and, acting under its responsibilities, it must exercise its high powers in ways that will build up a system of schools in the city likely to articulate with the State educational system and become the effective instrument of developing the intelligence and training the character of the children of the city up to the ideals of the State.

The name of the legislative branch of the school government is not material, and the one to which the people are accustomed may well continue to be employed. There is no name more appropriate than the "Board of Education."

The manner of selecting the members of this legislative

body may turn somewhat upon the circumstances of the city. We are strongly of the opinion that in view of the well-known difficulty about securing the attendance of the most interested and intelligent electors at school elections, as well as because of the apparent impossibility of freeing school elections from political or municipal issues, the better manner of selection is by appointment.

If the members of the board are appointed, the mayor of the city is likely to be the official to whom the power of appointment may most safely be intrusted. The mayor is not suggested because his office should sustain any relations to the school system, but in spite of the fact that it does not and should not. The school system should be absolutely emancipated from partisan politics and completely dissociated from municipal business. But we think the appointments should be made by some one person rather than by a board. The mayor is representative of the whole city and all its interests. While not chosen with any reference to the interests of the schools, he may be assumed to have information as to the fitness of citizens for particular responsibilities and to be desirous of promoting the educational interests of the people. If he is given the power of appointment, he should be particularly enjoined, by law, to consider only the fitness of individuals and to pay no regard to party affiliations; unless it be particularly to see to it that no one political party has an overwhelming preponderance in the board. The mayor very commonly feels constrained, under the pressure of party expediency, to make so many questionable appointments that he is only too glad, and particularly so when enjoined by the law, to make very acceptable appointments of members of school boards, in order that he may gratify the better sentiment of the city. We are confident that the problem of getting a representative board of education is not so difficult as many think, if the board is not permitted to make patronage of work and of salaried positions at the disposal of the public school system. Under such circumstances, and more and more so as we have approached such circumstances, appointment in the

way we suggest has produced the best school boards in the larger cities of the country.

Attempts to eliminate partisanship from school administration, by arraying an equal number of partisans against each other in school boards do not at least aim at an ideal. At times such boards have worked well and at others have led to mischievous consequences. The true course is to insist that all who have any share in the management of the schools shall divest themselves of partisanship, whether political or religious, in such management, and give themselves wholly to the high interests intrusted to them. If it be said that this cannot be realized, it may be answered, without admitting it, that even if that were so it would be no reason why the friends of the schools should not assert the sound principle and secure its enforcement as far as possible. We must certainly give no countenance to makeshifts which experience has shown to be misleading and expensive. The right must prevail in the end, and the earlier and more strongly it is contended for the sooner it will prevail.

The members of school boards should be representative of the whole population and of all their common educational interests, and should not be chosen to represent any ward or subdivision of the territory or any party or element in the political, religious, or social life thereof. Where this principle is not enforced, the members will feel bound to gain what advantage they can for the sub-district or special interests they represent; bitter contests will ensue, and the common interests will suffer.

The number of the members of a board of education should be small. In cities of less than 500,000 inhabitants it should not be more than nine, and preferably not more than five. In the very largest cities it may well be extended to fifteen.

The term for which members are appointed should be a long one, say five years.

We think it an excellent plan to provide for two branches and sets of powers in the board of education; the one to have the veto power, or at least to act as a check upon the acts of

the other. This may be accomplished by creating the office of School Director and charging the incumbent with executive duties on the business side of the administration, and by giving him the veto over the acts of the other branch of the board, which may be called the School Council. Beyond the care and conservatism which are insured by two sets of powers acting against each other, this plan has the advantage of giving the chief executive officer of the system just as high and good a title as that of members of the board; it is likely to secure a more representative man, and gives him larger prerogatives in the discharge of his executive duties and better standing among the people, particularly among the employees and teachers associated with the public school system.

If this plan is adopted, the school director should be required to give his entire time to the duties of his position and be properly compensated therefor. He should be the custodian of all property and should appoint all assistants, janitors, and workmen authorized by the board for the care of this property. He should give bond with sufficient sureties and penalties for the faithful and proper discharge of all his duties. He should be authorized by law to expend funds, within a fixed limit, for repairs, appliances, and help, without the action of the board. All contracts should be made by him and should run in his name, and he should be charged with the responsibility of seeing that they are faithfully and completely executed. All contracts involving more than a limited and fixed sum of money should be let upon bids to be advertised for and opened in public. He should have a seat in the board of education, should not vote but should have the power to veto, either absolutely or conditionally, any of the acts of the board through a written communication. This officer and the school council should together constitute the board of education.

The board of education should be vested only with legislative functions and should be required to act wholly through formal and recorded resolutions. It should determine and direct the general policy of the school system. Within reason-

able limits, as to amount, it should be given power, in its discretion, to levy whatever moneys may be needed for school purposes. It should control the expenditure of all moneys beyond a fixed and limited amount, which may safely and advantageously be left to the discretion of the chief executive business officer. It should authorize, by general resolutions, the appointment of necessary officers and employees in the business department, and of the superintendent, assistants, and teachers in the department of instruction, but it should be allowed to make no appointments other than its own clerk. With this necessary exception, single officers should be charged with responsibility for all appointments.

This plan, not in all particulars, but in the essential ones, has been on trial in the city of Cleveland, O., for nearly three years, and has worked with very general acceptability. If this plan is adopted, the chief executive officer of the system is already provided for and his duties have already been indicated. Otherwise it will be necessary for the board to appoint such an officer. In that event the law should declare him independent, confer upon him adequate authority for the performance of executive duties, and charge him with responsibility. But we know of no statutory language capable of making an officer appointed by a board, and dependent upon the same board for supplies, independent in fact of the personal wishes of the members of that board. And right here is where the troubles rush in to discredit and damage the school system.

We now come to the subject of paramount importance in making a plan for the school government in a great city, namely, the character of the teaching force and the quality of the instruction. A city school system may be able to withstand some abuses on the business side of its administration and continue to perform its function with measurable success, but wrongs against the instruction must, in a little time, prove fatal. The strongest language is none too strong here. The safety of the Republic, the security of American citizenship, are at stake. Government by the people has no more dangerous pitfall in its road than this, that in the mighty cities of

the land the comfortable and intelligent masses, who are discriminating more and more closely about the education of their children, shall become dissatisfied with the social status of the teachers and the quality of the teaching in the common schools. In that event, they will educate their children at their own expense, and the public schools will become only good enough for those who can afford no better. The only way to avert this is by maintaining the instruction upon a purely scientific and professional footing. This is entirely practicable, but it involves much care and expense in training teachers, the absolute elimination of favoritism from appointments, the security of the right to advancement, after appointment, on the basis of merit, and a general leadership which is kindly, helpful, and stimulating to individuals, which can secure harmonious co-operation from all the members, and which lends energy and inspiration to the whole body.

This cannot be secured if there is any lack of authority, and experience amply proves that it will not be secured if there is any division of responsibility. The whole matter of instruction must be placed in the hands of a superintendent of instruction, with independent powers and adequate authority, who is charged with full responsibility.

The danger of inconsiderate or improper action by one vested with such powers is of course possible, but it is remote. Regardless of the legal powers with which he may be individually vested, he is in fact and in law a part of a large system. He must act through others and in the presence of multitudes. There is great publicity about all he does. When a single officer carries such responsibility he is at the focus of all eyes. There are the strongest incentives to right action. Without discovery, at least by many persons, he cannot act wrongfully. If he is required to act under and pursuant to a plan, the details of which have been announced, and of which we shall speak in a moment, a wrongful act will be known to the world and he must bear the responsibility of it, and the danger of maladministration is almost eliminated.

Moreover, we must consider the alternative. It is not in

doubt. All who have had any contact with the subject are familiar with it. It is administration by boards or committees, the members of which are not competent to manage professional matters and develop an expert teaching-force. Yet they assume, and in most cases honestly, the knowledge of the most experienced. They override and degrade a superintendent, when they have the power to do so, until he becomes their mere factotum. For the sake of harmony and the continuance of his position he concedes, surrenders, and acquiesces in their acts, while the continually increasing teaching-force becomes weaker and weaker and the work poorer and poorer. If he refuses to do this, they precipitate an open rupture and turn him out of his position. Then they cloud the issues and shift the responsibility from one to another. There are exceptions, of course, but they do not change the rule.

It will be unprofitable to mince words about this all-important matter. If the course of study for the public schools of a great city is to be determined by laymen, it will not be suited to the needs of a community. If teachers are to be appointed by boards or committees, the members of which are particularly sensitive to the desires of people who have votes or influence, looseness of action is inevitable and unworthy considerations will frequently prevail. If the action of a board or committee be conditioned upon the recommendation of a superintendent, the plan will not suffice. No one person is stronger than the system of which he is a part. Such a plan results in contests, between the board and the superintendent, and such a contest is obviously an unequal one. There is little doubt of the outcome. In recommending for the appointment of teachers, the personal wishes of members of the board, in particular cases, will have to be acquiesced in. If a teacher, no matter how unfit, cannot be dropped from the list without the approval of a board or committee after they have heard from her friends and sympathizers, she will remain indefinitely in the service. This means a low tone in the teaching force and desolation in the work of the schools. If the superintendent accepts the situation, he becomes less and

less capable of developing a professional teaching service. If he refuses to accept it, he is very likely to meet humiliation: dismissal is inevitable unless he is strong enough to make himself secure by doing the right thing and going directly to the people and winning their approval.

The superintendent of instruction should be charged with no duty save the supervision of the instruction, but should be charged with the responsibility of making that professional and scientific, and should be given the position and authority to accomplish that end.

If the board of education is constituted upon the old plan, he must be chosen by the board. If it is constituted upon the Cleveland plan, he may be appointed by the school director with the approval of two-thirds or three-fourths of the council. The latter plan seems preferable, for it centralizes the main responsibility of this important appointment in a single individual. In either case, the law and the sentiment of the city should direct that the appointee shall be a person liberally educated, professionally trained, one who knows what good teaching is, but is also experienced in administration, in touch with public affairs and in sympathy with popular feeling.

The term of the superintendent of instruction should be from five to ten years, and until a successor is appointed. In our judgment it should be determinate so that there may be a time of public examination, but it should be sufficiently long to enable one to lay foundations and show results without being carried under by the prejudices which always follow the first operation of efficient or drastic plans. The salary should be fixed by law and not subject to change in the middle of a term or except by law.

For reasons already suggested, the superintendent, once appointed, should have power to appoint from an eligible list all assistants and teachers authorized by the board, and unlimited authority to assign them to their respective positions and reassign them or remove them from the force at his discretion.

To secure a position upon the eligible list from which

appointments may be made, a candidate, if without experience, should be required to complete the full four years' course of the city high schools, or its equivalent, and in addition thereto pass the examination of the board of examiners, and complete at least a year's course of professional training in a city normal training school under the direction of the superintendent. If the candidate has had say three years of successful experience as a teacher, he should be eligible to appointment by passing an examination held by a general examining board. This board may be appointed by the board of education, but should examine none but graduates of the high school and training school unless specially requested so to do by the superintendent of instruction. The number admitted to the training schools should be limited, and the examinations should be gauged to the prospective needs of the elementary schools, for new teachers. The supply of new teachers may well be largely, but should not be wholly, drawn from this local source. The force will gain fresh vitality by some appointments of good and experienced teachers from outside.

The work of putting a large teaching force upon a professional basis, of making the teaching scientific and capable of arousing minds to action, is so difficult that a layman can scarcely appreciate it. It has hardly been commenced, it has been made possible only when the avenues of approach to the service have been closed against the unqualified and unworthy. After that, the supervision must be close and general as well as sympathetic and decisive. The superintendent must have expert assistants enough to learn the characteristics and measure the work of every member of the force. They must help and encourage, advise and direct, according to the circumstances of each case. The work must be reduced to a system and the workers brought into harmonious relations. Each room must show neatness and life, and the whole force must show ardor and enthusiasm. By directing the reading, by encouraging an interchange of visits, by organizing clubs for self-improvement, by frequent class, grade, and general meetings, the professional spirit must be aroused and the work

energized. Those who show teaching power, versatility, amiability, reliability, steadiness, and growth, must be rewarded with the highest positions; those who lack fiber, who have no energy, who are incapable of enthusiasm, who will not work agreeably with their associates, must go upon the retired list. Directness and openness must be encouraged. Attempts to invoke social, political, religious, or other outside influences to secure preferment must operate to close the door to advancement. In general and in particular, bad teaching must be prevented. In every room, a firm and kindly management must prevail and good teaching must be apparent. All must work along common lines which will insure general and essential ends. Until a teacher can do this and can be relied upon to do it, she must be helped and directed; when it is manifest she cannot or will not do it, she must be dismissed: when she shows she can do it and wants to do it, she must be left to exercise her own judgment and originality and do it in her own way. In the schoolroom, the teacher must be secure against interference. In all the affairs of the school, her judgment must be trusted to the utmost limit of safety. Then judgment will strengthen and self-respect and public respect will grow. The qualities which develop in the teacher will develop in the school. To develop these qualities with any degree of uniformity, in a large teaching force, requires steady and uniform treatment through a long course of years under superintendence which is professional, strong, just, and courageous; which has ample assistance and authority; which is worthy of public confidence and knows how to marshal facts, present arguments, and appeal to the intelligence and integrity of the community with success.

It is the business of the plan of organization to secure such superintendence. It cannot be secured through an ordinary board of education operating on the old plan. It is well known what the influences are that are everywhere prevalent and must inevitably prevent it. It may be secured in the law, and it must be secured there or it will not be secured at all.

In concluding this portion of the report, the Committee indicates briefly the principles which must necessarily be observed in framing a plan of organization and government in a large city school system.

First. The affairs of the school should not be mixed up with partisan contests or municipal business.

Second. There should be a sharp distinction between legislative functions and executive duties.

Third. Legislative functions should be clearly fixed by statute and be exercised by a comparatively small board, each member of which is representative of the whole city. This board, within statutory limitations, should determine the policy of the system, levy taxes, and control the expenditures. It should make no appointments. Every act should be by a recorded resolution. It seems preferable that this board be created by appointment rather than election, and that it be constituted of two branches acting against each other.

Fourth. Administration should be separated into two great independent departments, one of which manages the business interests and the other of which supervises the instruction. Each of these should be wholly directed by a single official who is vested with ample authority and charged with full responsibility for sound administration.

Fifth. The chief executive officer on the business side should be charged with the care of all property and with the duty of keeping it in suitable condition: he should provide all necessary furnishings and appliances: he should make all agreements and see that they are properly performed: he should appoint all assistants, janitors, and workmen. In a word, he should do all that the law contemplates and all that the board authorizes, concerning the business affairs of the school system, and when anything goes wrong he should answer for it. He may be appointed by the board, but we think it preferable that he be chosen in the same way the members of the board are chosen, and be given a veto upon the acts of the board.

Sixth. The chief executive officer of the department of instruction should be given a long term and may be appointed

by the board. If the board is constituted of two branches, he should be nominated by the business executive and confirmed by the legislative branch. Once appointed, he should be independent. He should appoint all authorized assistants and teachers from an eligible list to be constituted as provided by law. He should assign to duties and discontinue services for cause, at his discretion. He should determine all matters relating to instruction. He should be charged with the responsibility of developing a professional and enthusiastic teaching force and of making all the teaching scientific and forceful. He must perfect the organization of his department and make and carry out plans to accomplish this. If he cannot do this in a reasonable time he should be superseded by one who can.

The government of a vast city school system comes to have an autonomy which is largely its own and almost independent of direction or restraint. The volume of business which this government transacts is represented only by millions of dollars: it calls not only for the highest sagacity and the ripest experience, but also for much special information relating to school property and school affairs. Even more important than this is the fact that this government controls and determines the educational policy of the city and carries on the instruction of tens or hundreds of thousands of children. This instruction is of little value, and perhaps vicious, unless it is professional and scientific. This government is representative. All citizens are compelled to support it, and all have large interests which it is bound to promote. Every parent has rights which it is the duty of this school government to protect and enforce. When government exacts our support of public education, when it comes into our homes and takes our children into its custody and instructs them according to its will, we acquire a right which is as exalted as any right of property, or of person, or of conscience, can be; and that is the right to know that the environment is healthful, that the management is kindly and ennobling, and that the instruction is rational and scientific. It is needless to say to what extent

these interests are impeded or blocked, or how commonly these rights of citizenship and of parentage are denied or defied, or how helpless the individual is who seeks their enforcement under the system of school government which has heretofore obtained in some of the great cities of the country. This is not surprising. It is only the logical result of the rapid growth of cities, of a marvelous advance in knowledge of what is needed in the schools, of the antagonism of selfish interests by which all public administration and particularly school administration is encompassed, and of the lack of plan and system, the confusion of powers, the absence of individual responsibility, in the government of a system of schools. By the census of 1890 there are seven cities in the United States, each with a population greater than any one of sixteen States. The aggregate population of twelve cities exceeds the aggregate population of twenty States. Government for education certainly requires as strong and responsible an organization as government for any other purpose. These great centers of population, with their vast and complex educational problems, have passed the stage when government by the time-honored commission will suffice. No popular government ever determined the policy and administered the affairs of such large bodies of people successfully, ever transacted such a vast volume of business satisfactorily, ever promoted high and beneficent ends, ever afforded protection to the rights of each individual of the great multitude, unless in its plan of organization there was an organic separation of executive, legislative, and judicial functions and powers. All the circumstances of the case, and the uniform experience of the world, forbid our expecting any substantial solution of the problem we are considering until it is well settled in the sentiments of the people that the school systems of the greatest cities are only a part of the school systems of the States of which these cities form a part, and are subject to the legislative authority thereof: until there is a plan of school government in each city which differentiates executive acts from legislative functions; which emancipates the legislative branch of that government from the influence of

pelf-seekers; which fixes upon individuals the responsibility for executive acts, either performed or omitted; which gives to the intelligence of the community the power to influence legislation and exact perfect and complete execution; which affords to every citizen whose interests are ignored, or whose rights are invaded, a place for complaint and redress; and which puts the business interests upon a business footing, the teaching upon an expert basis, and gives to the instruction that protection and encouragement which is vital to the development of all professional and scientific work.

We have undertaken to indicate the general principles which we think should be observed in setting up the framework of government of a large city school system. While we have no thought that any precise form of organization which could be suggested, would, in all details, be imperative, we are confident that the form or plan of organization is of supreme consequence, and that any which disregards the principles we have pointed out will work to disadvantage or lead to disaster.

ANDREW S. DRAPER,
President of the Illinois State University, Champaign, Ill.
W. B. POWELL,
Superintendent of Schools, Washington, D. C.
A. B. POLAND,
State Superintendent of Public Instruction, Trenton, N. J.

I find myself in general accord with the doctrines of the report. There is only one feature of it from which I feel obliged to dissent, and that is an important though not necessarily a vital one. I refer to the office of school director. I see no need of such an officer elected by the people, and I do see the danger of his becoming a part of the political organization for the dispensation of patronage.

All power and authority in school affairs should reside ultimately in the board of education, consisting of not more than eight persons appointed by the mayor of the city, to hold office four years, two members retiring annually and eligible for reappointment once and no more. This board should

appoint as its chief officer a superintendent of instruction, whose tenure should be during good behavior and efficiency, and whose powers and duties should be to a large extent defined by statute law, and not wholly or chiefly by the regulations of the board of education. The superintendent of instruction should have a seat and voice but not a vote in the board of education. The board of education should also appoint a business agent, and define his powers and duties in relation to all matters of buildings, repairs, and supplies, substantially as set forth in the report in relation to the school director.

All teachers should be appointed and annually reappointed or recommended by the superintendent of instruction, until after a sufficient probation they are appointed on a tenure during good behavior and efficiency.

All matters relating to courses of study, text-books, and examinations should be left to the superintendent and his assistants, constituting a body of professional experts who should be regarded as alone competent to deal with such matters, and should be held accountable therefor to the board of education only in a general way, and not in particular details.

EDWIN P. SEAVER,
Superintendent of Schools, Boston, Mass.

I concur in the recommendations of the Sub-committee on the Organization of City School Systems as summarized in the concluding portion of the report, omitting in item *Third*, the words "And that it be constituted of two branches acting against each other." Omit *Fifth*, "But we think it preferable that he be chosen in the same way that members of the board are chosen and be given veto power upon the acts of the board." I recommend that the veto power be given to the president of the Board.

ALBERT G. LANE,
Superintendent of Schools, Chicago, Ill.

APPENDICES

I. OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE TRAINING OF TEACHERS

II. OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE CORRELATION OF STUDIES

III. OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE ORGANIZATION OF CITY SCHOOL SYSTEMS

APPENDIX I

OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE TRAINING OF TEACHERS

Following are the questions in answer to which the opinions were written:

1. What should be the lowest age at which a person should be permitted to undertake a course of professional work?
2. What should be the requirements for scholarship to enter on such a course?

(*a*) English—Grammar, Historical Grammar, Rhetoric, Literature.
(*b*) Mathematics—Arithmetic, Algebra, Geometry.
(*c*) Botany and Zoölogy.
(*d*) Drawing.
(*e*) Music.
(*f*) History.
(*g*) Geography.
(*h*) Physics.
(*i*) Chemistry.
(*j*) Foreign languages—French, German, Latin, Greek.
(*k*) Physiology and Hygiene.
(*l*) Mineralogy.

3. Should scholarship be determined by an examination, or should a high-school diploma be accepted as evidence? If the latter, should a four-years' course be required?
4. What should be the duration of the training-school course?
5. What proportion of this time should be devoted to studying principles and methods of education? What proportion, to the practice of teaching?
6. To what extent should psychology be studied, and in what way?

7. Along what lines should the observation of children be pursued?

8. What measurements of children should be made, and what apparatus should be required for the purpose?

9. In what way should principles of education be derived from psychology and allied sciences?

10. How far and in what way should the history of education be studied? In what way may the history of education be made of practical use to teachers?

11. In what way should the training in teaching the various subjects of the common-school curriculum be pursued?

(*a*) By writing outlines of lessons?
(*b*) By giving lessons to fellow pupil-teachers?
(*c*) By the study of books or periodicals devoted to methods of teaching?
(*d*) By lectures?

12. In a model school, should there be a model-teacher placed over each class? Or, should there be a model-teacher placed over every two classes? Or, should the pupil-teachers be held responsible for the teaching of all classes, under the direction of a critic-teacher?

13. What is the most fruitful plan of observing the work of model-teachers?

14. What is the most fruitful plan of criticising the practice work of pupil-teachers?

15. Should the criticism be made by the teachers of methodology, or by critic-teachers appointed specially for the purpose, or by the model-teachers?

16. Should the imparting of knowledge, other than psychology, principles, methods, and history of education, form any part of the work of a normal or training school?

17. How should a pupil-teacher's efficiency be tested in a training school?

18. On what grounds should the diploma of a training school be issued?

EARL BARNES, *Professor of Education*,
Stanford University, Palo Alto, Cal.

The training of teachers seems to me the most important and the most difficult question connected with our work in America to-day, and I am glad a systematic effort is being made to gather information bearing on it. The conditions vary so widely in our country that no one statement will hold for the whole country. With a wage in country schools often as low as twelve dollars a month, we cannot demand age nor preparation; while in California, with the wage almost never falling below fifty dollars a month, we can demand much more. In answering the questions I shall therefore have in mind the country and village teachers in a part of our country which pays from thirty dollars to sixty dollars a month for such work.

7. Studies on children should include observation of physical development, simple measurements, sense tests, recognition of common pathological conditions; studies in mental averages, peculiarities in mental operations, and tests for correction; æsthetic averages and peculiarities; and moral activities, with observational studies on the action of the mind of a child in dealing with each of the common subjects of study in elementary schools.

8. The measurements of children should be made along lines already worked over, say along the lines proposed by Dr. Boas in gathering data for Chicago. An inferior line of measurements had better be followed if it alone gives materials for comparison. Scales, measuring rods, and a pair of calipers will be sufficient.

10. The history of education is very badly taught at present. It should be something more than a series of biographies, or else nothing. I believe the history of education can be made a very valuable study, and that, if well taught, it would take place next to psychology in the course. Psychology should ask, What is the mind we are training? History of education should ask, How has the mind become what it is? It should be studied from original records, as in literature or science, and it should ask in successive periods of human development: 1. What kind of men and women were in demand at this time? What were the ideals? 2. What influences, conscious or unconscious, were brought to bear upon the young through religion, arts, literature, schools, and homes, to make more of the men and women desired? 3. How far did the effort to perpetuate or to realize their ideal succeed? 4. If it failed, why? Coming to our own time we could ask, What kinds of men and women are in demand? Judging from the experience of the past, how can we go to work to make more such men and women as we want? The manuals of school theory and personal biography can well be crowded into a brief informational course.

11. Children should be observed and studied while trying to learn the common subjects. Then by class discussion general

principles should be drawn out. The students should draught sample lessons—these should be discussed and corrected. Then the students should read and hear lectures, then form more lessons and teach them.

12. Not too many model-teachers—they are dangerous.

13. They should not be observed as models before trying to teach.

MRS. SARA F. BLISS, *Normal Training School*, Providence, R. I.

2. A good high-school education, including a large part of the outline laid down on the question paper. The knowledge obtained is not necessarily called into requisition in any or every department of teaching, but the discipline derived from a thorough and careful study of the different subjects gives a wide general scope and provides power. "Knowledge" (all things being equal) "is power." The foreign languages, while they are a means of excellent discipline and culture, are not essential in preparation for primary or grammar school work.

6. Psychology should be studied as a science, and at the same time by the study of individuals. To be able to formulate and detect various conditions of mental power and action, requires enlightenment and wise direction, also capable supervision in the application of the science. The teacher needs to study children or a child at work, at play, in his relation to others, his playmates, his elders, in his unconscious moments, when left to himself, when he is interested in his own devices, when indolent and inactive, when he is being instructed, etc. Is it possible each day for the teacher to arouse the activities of interest, growth, and thought? Such is the real study of psychology.

10. The history of education should be studied not simply to become acquainted with the facts that there have been such enlightened educators, at certain periods, and what they thought, but their theories, principles, the *actual schools* of such individuals, their influence upon the masses or upon a select few. The most useful feature, however, is the influence upon the world; how far reaching, to what extent, we are affected by them. Bacon's theories mark a period in the evolution of education in England.

11. The four processes mentioned on the question proper are useful in their respective places. The actual observation and practice with classes of children to whom the subjects are suited, give far more enlightenment. In the theory class, one well-developed lesson putting into practice the previous study is of greater value than the other four. The theory is by no means sufficient: unless the teacher in practice has a personality, a power to arouse, stimulate to action, all the study and preparation in the world will prove a failure.

12. It is not necessary to have a model-teacher for each class. One model-teacher may also be a critic-teacher. A critic should be able to give good model lessons. One critic, who is at the

same time a model-teacher, may direct two rooms. It is not possible, however, to secure in every direction as good results as one teacher well trained may get by consecutive lessons from day to day. The only way to train a teacher is to give her sufficient responsibility and practice and discipline to become mistress of the situation. She should be held responsible to a certain extent, though allowance should be made for inexperience. The critic should see to it that the children under the charge of the pupil-teacher do not eventually suffer. She should herself be able to make provisions for defects to some extent.

A. C. BOYDEN, Bridgewater, Mass.

11. Outlines of lessons by pupil-teachers lead to formalism, to a transfer of thought from the individual child to the subject-matter in its mere logical relations.

Giving lessons to fellow pupil-teachers is valuable as a training in self-confidence, in directing thought, in meeting and answering questions, in acquiring skill, in putting questions, handling apparatus, etc.

12. Investigation and discussion of the subject from the teacher's standpoint with a live teacher is the best preparation. It furnishes inspiration, broader views, methods of arrangement and presentation, and suggestions of device, which books and lectures fail to give.

RICHARD G. BOONE, *Principal of the State Normal School*, Ypsilanti, Mich.

The teachers of secondary schools differ, obviously, from those doing elementary work, in that the scholastic requirements of the former are both absolutely and relatively greater. Absolutely greater, as the work done, the same in subject-matter,—science, the humanities, languages, and mathematics,—is more comprehensive, and the corresponding processes comparative and critical rather than individual and descriptive. All of which implies in the teacher abundant insights and habits of discrimination, re-enforced by disciplined powers and large scholarship.

But if, *e. g.*, elementary teaching is intelligent only with a good elementary training plus a secondary education, instruction in the secondary school equally requires of the teacher, added to its own richest scholarship, the spirit and learning of the university and the habits and temper of the original investigator.

There is needed also a training in some school upon true university foundations, in which the secondary teacher shall have proved his claims to independent research and his resourcefulness in handling the raw materials of his course. This does not mean that the individual teaching and investigative devices of the university are to be of necessity introduced into the secondary school; or that the time here shall be given over to original inquiry and laboratory research. The high school is essentially a teaching body. The relative immaturity of the students, the accompanying neces-

sity of dealing with generalizations and rules and verifications, and the fact that the choice of a life-work, at least among learned occupations, is yet some years away, make instruction, not training or individual research, to be the chief function of the secondary school.

As the student grows older and more self-helpful and capable of directing his own studies within wide limits, as in the later college and university years, one may allow for less of professional insight and skill, and more for scholarship.

The university training, or a course grounded upon a liberal culture and after the individual methods of the laboratory and the seminary, may be made to contribute more than any inferior school to the resourcefulness of teaching and to an independence of mere recipes and formulæ. This elevation of the plane of criticism and guidance through the possession of generous standards and right habits of thinking are increasingly needed as the child grows older, until he reaches years of something like self-helpfulness.

It is most needed by the secondary teacher, inasmuch as the course pursued in secondary schools covers the most critical because transition period in the individual's life. These years are the most important in an educational way, not because the most fruitful, for the first six or eight years of a child's life would certainly take precedence ; not because of the introduction of any new means, or any new standards of life ; but rather because of the confusion and complexity of the life in these years, and yet more because they are so little understood. New interests are springing up ; new motives prevail ; new dangers are imminent ; new and greater prospects stretch out and multiply. To direct the energies into and through this adolescent period demands the largest heart not less than a well-filled head ; an understanding of the conditioning factors in this new life, and how to use them ; a trained sympathy with its wants and waywardness. To say that these may not be given to one is to repeat the objection used against normal schools so indiscriminately fifty and forty years ago.

To concede that the real purpose of the secondary school is *education* and not *training* or *cram*, is to concede at once that the teachers of secondary schools have need of a complete and suitable preparation, just as do lower class teachers. That they need it more than do many other teachers, follows from the complexity and stubbornness of the conditions.

The high school, though of the highest secondary rank, belongs in its interests and methods to the common-school system, and fits its own teaching to the accomplished results of the elementary school. To do the work of the one well, requires a knowledge of the other. Looked at from this side, the preparation of the secondary teacher should include professional and practical acquaintance with the curriculum, and children, and the institutional and social conditions, and inner working of elementary schools.

This point needs emphasis because the preparation of teachers for secondary education, when it has been undertaken at all, has usually been from the point of view of the college and of scholar-

ship as satisfying every requirement. High-school teachers should have had at least a cadet training for a minimum time in elementary schools, if indeed they do not take their promotion to the higher classes from the lower.

Summarizing briefly the points enumerated, they are as follows:

1. The scholarship of secondary teachers should be relatively more abundant than that for elementary teachers, and is equally urgent.

2. The fact that the secondary school is a teaching body, and not an organization for research, emphasizes the need of professional training in its teachers.

3. The preparation of such teachers should include, also, an intimate and patient study of the adolescent, as the most significant fact in the secondary period.

4. Because the secondary school is often wholly, and always more or less, a finishing school, the training of its teachers should include both a theoretical and practical acquaintance with the organization and work of the under classes.

5. Inasmuch as it is sometimes a fitting school, and is growing in this service, the training of its teachers should include an equally efficient acquaintance with the constitution and culture of the superior schools depending upon it.

This implies:

(1) The scholarship and training that come to one from its classrooms and laboratories; and

(2) A well-directed professional study of the leading educational and administrative problems that are common to the two schools, and those especially that are incident to the period of youth.

F. B. GAULT, *President of the University of Idaho*,
Moscow, Idaho.

I find a marked weakness in the professional training of teachers. I would rather place a young girl, granted she has requisite culture and an ambition to succeed, in a school with an able teacher, and let her assist in the drudgery, acting as a cadet or helper, than to run the risk of having her pass through a training school with critic-teacher attachments.

5. If the course is one year, devote all the time to study of principles and methods. True professional preparation consists of training *under* teaching, not *by* teaching. My best teachers have always come from the best schools. I think that practice-teaching in the model or training school is of little benefit to any one. If the school does good teaching, if it arouses the teaching ideal and teaching spirit, if it exemplifies the best in both form and spirit of teaching, the student will come out a teacher, even though there is not a day of practice work. Critic-teachers, expert trainers, *et al.*, maim and pervert as many teachers as they aid. The spirit of the training or professional school is worth more than training in conventional forms.

9. I have little faith in professional training that does not apply

the psychology upon the scholastic branches. The best psychology must accompany the best daily scholastic work. It must not be a top-dressing, but an outgrowth of the daily experience of the teacher while under training. Psychology is not a separate and detached study. It is under, above, and about every branch.

11. I think the best professional training will come only with scholastic training as the basis, under masterful teachers, who inspire students with a desire to teach and to teach well, and who are able to reveal the bearings of things. With some well-fixed scientific principles, with professional enthusiasm, with something of an inventive spirit aroused, the young teacher may safely go out to conduct a model school for himself, with his own ideals as critic-teacher, and succeed. The tendency of normal training is to bring the teacher to a full stop intellectually and professionally.

J. M. GREENWOOD, *Superintendent of Schools*,
Kansas City, Mo.

5. About two-thirds of the time should be devoted to the discussion of principles and methods of teaching, and not more than one-third to practice-teaching. Practice-teaching, "in leading-strings," has little independent educational value.

6. Probably the best way for a beginner to take up psychology is to require him or her to analyze a mental process, such as reciting a lesson, or solving a problem, or writing a letter, and to place each act of the mind during the process where it belongs. In this way the learner gets the technique of psychology; but the real study must proceed from the standpoint of the "*will* and *motives*." All scientific teaching depends upon psychology: it is the *psychology* which fits into every-day work. Much of it, as some get hold of it, is of such an intangible nature that it has no bearing on ordinary affairs. A good working *psychology*, derived from introspection and observation, is what the average teacher needs.

7. As a general thing, I would not advise teachers to make a critical physical examination of children. To find out whether they hear well and have good eyes, will be sufficient in most cases. Mental and moral traits should be carefully noted according to a scheme prepared by the superintendent. A blank, not too elaborate, will cover all necessary traits—bodily, mental, and moral.

11. (1) By analyzing each lesson; (2) by selecting the salient points for the recitation; (3) by presenting them in an orderly manner, provided the learners' minds have been properly prepared; (4) by connecting the lesson with all that had preceded it; (5) by having it reproduced and then clinched; (6) by having it practically applied; (7) by special and general discussion. The teacher needs to be trained so as to discriminate sharply between the essentials and the non-essentials in every recitation.

14. Too much criticism hampers. The first thing to show the beginner is what I call "schoolroom tactics," which includes all class movements regulated by signals, promptly and cheerfully obeyed. The critic-teacher should go through these movements

first and in the presence of the beginner. As soon as the beginner has the room well in hand, instruction in the branches should begin. Here, again, the critic must know whether it is better to let the beginner flounder for awhile, or to take hold and "straighten things out." It depends! "Heady novices" oftentimes are helped by running against the wall. A sympathetic critic—I do not like the word "critic" in this connection—can watch several rooms; but a majority of the critic-teachers I have seen at work were pedantic hinderances instead of helpers. The best helpers are those who sit quietly in the room, and then, when the session has closed, talk with the beginner over the work, asking her why she did this or that—approving the good, and suggesting remedies for what was poorly done.

B. C. GREGORY, *Supervising Principal*, Trenton, N. J.

1. If pupils are to be permitted to enter who have not completed a high-school course, I would *postpone* the time of entering; that is to say, the maturity will come earlier if the development is aided by the high school than if it is not thus aided. Thus the high-school requirement naturally leads to eighteen as an average age of entrance; but if the pupil has not had the advantage of a high-school course, I should hesitate to concede him an equal maturity for two or three years after that age. But, as the undergraduates of high schools and grammar schools who enter the normal schools are of less age than the high-school graduate, the practice of normal schools in admitting these persons is to reverse the action of the law suggested by my opinion as above. If my position is correct, the immaturity of many normal-school pupils is worthy of serious consideration. For, if a girl leaves the high school before completing the course, this act ought not to hasten her entrance into the normal school, but ought the rather to postpone it beyond the time when she would have graduated from the high school.

5. The question seems to imply that a certain section of the year should be given to the one kind of training, and a certain section to the other. In my judgment, the best method is found in carrying on the two kinds of training simultaneously. If possible, I would have a part of each week given to teaching, and a part to principles, etc. This plan enables the pupil-teacher to revise her theories in the light of experience; it gives her something of the experience of a regular teacher. Much of the instruction in principles and methods can be appropriated only if put to the test of trial. It is the old law of "education by doing," which applies to the normal pupil equally with the primary pupil. But if the instruction in theory is given in a lump, and the practice taken in the same way, much of the theory will not be digested, and will find little expression in the teaching. In the work of the regular teacher, progress comes from testing a theory, which, being found imperfect, is reconsidered and retested. The normal-school course should follow this hint. I would, therefore, carry the practice of teaching throughout the whole course, giving it very nearly one-half the time.

6. In my judgment, much of the time spent in teaching psychology in normal schools is lost. I do not think that too much time is spent on the subject, but that the teaching is not conducted in such a way as to result in much good; indeed, I would spend more time on the subject than is usually given to it. I would have the usual course in theoretical psychology, but I would have it much simpler than is usually the case. Then I would have an additional course in applied psychology, bringing the subject into actual touch with the details of schoolroom work; this is generally left out; it is the pathology of the subject. To be effective, this course must be constantly subjected to verification through the experiences of the classroom. My distribution of the time allotted respectively to the principles and to the practice of teaching (see 5) is necessary to carry out this idea.

10. My opinion is that this branch of pedagogy requires considerable maturity. It comes properly at the end of a normal course, when the pupil has been trained to consider principles of education rather than devices, and when the habit of psychological thinking has been developed; then the student is prepared to consider the historical evolution of the principles of which she has already some practical knowledge.

14. The most valuable kind of criticism is given, however, in the critic class. This class should be held once a week, and should be presided over by the critic-teacher or principal of the training school. The criticisms on each pupil-teacher should be read in class. At first there is sensitiveness on the part of the pupil-teacher, but my experience is that where the matter is managed wisely and kindly, this feeling disappears. The error of one pupil-teacher reported by a training teacher is often a typical error, which easily might have been the error of any other member of the training class. The general discussion of the points of criticism in open class proves exceedingly helpful and stimulating to all present.

PAUL H. HANUS, *Assistant Professor of the History and Art of Teaching*, Harvard University, Cambridge, Mass.

2. The first element of professional training for secondary-school teachers is *scholarship*. Without a full and ready knowledge of the subject he has to teach—a knowledge which extends in scope and thoroughness far beyond what is required of his pupils—no teacher, whatever his natural or acquired teaching power may be, can become, as he should, the trustworthy, inspiring, and vigorous leader of his pupils. In most instances, failure to attain a respectable standard of achievement even as a mere classroom teacher is due more to the want of scholarship than to deficiency in teaching power. Scholarship is therefore fundamental. Besides being comprehensive in scope and thorough in quality, it should cover special proficiency in that one subject or group of closely related subjects which the future teacher expects to teach. Such scholarship is possessed by college graduates who have made good use of their opportunities. Hence only such college graduates, or persons who

give evidence of attainments in scholarship equal to those of such graduates, should be considered eligible to positions as teachers in secondary schools.

But scholarship, though fundamental, is not enough. The future teacher must learn how to use his knowledge wisely and effectively *as a teacher*. The secondary-school teacher is primarily not a teacher of subjects at all, "but a teacher of minds by means of subjects." To teach the subject, to be a specialist pure and simple, that is the function of the college or university professor.

The secondary-school teacher must learn how to use his subject *as a means of discovering his pupil* as well as of instructing him. Before he can develop his pupil's interest and power, he must know what they are Having discovered his pupil, he must then learn how, with the help of instruction, he can best promote the pupil's development.

The well-trained secondary-school teacher must therefore be more than a classroom teacher, important as his work in the classroom is. He must extend his horizon beyond his own subject and his own immediate duties. He must see his subject in its relation to other subjects. He must study it so as to form a just estimate of its educational value. He must see the relation of his own daily work to that of his fellow-workers. He must therefore obtain a clear conception of the *aims* and *means* as well as of the *methods* of education, in order that he may develop the *conscious purposes* that should determine the whole nature and quality of his work. He must also learn how to provide for his pupils the most salutary physical environment, and how he can best promote their normal physical development. To inculcate such a conception of the teacher's work is the function of *educational theory*. The second phase of professional training for secondary-school teachers is, therefore, *educational theory*, which comprises :

(1) The study of the *scope and meaning of education.*

(2) The study of *psychology applied to teaching.*

Such a study presupposes some acquaintance with psychology as a science, and means such a further study of the mind *and of its development* as will enable one to enter into the mind's processes in acquisition and to realize a youth's mental life. To this end the teacher must learn that he now studies pyschology, not for its own sake, but for the sake of his pupils ; that he is not to attempt new discoveries in psychology, but to acquire for himself a new mental attitude ; that he is to learn how to trace the links in a chain of complex mental phenomena, how to facilitate the accomplishment of a difficult task, how to promote a gain in will power, the birth of a new impulse, or the development of a new affection. Such a study of psychology should aim to develop in the future teacher the spirit and attitude of the observing naturalist. It should be begun through lectures, *supplemented by a careful study of the work of the most inspiring and successful teachers in their classrooms;* but such a study of psychology should become the lifelong habit of the teacher, and its best and most fruitful results are not attainable until he *teaches his own classes in his own school.*

(3) The study of (*a*) *educational values* and (*b*) of the *correlation of studies.*

(*a*) This means an attempt to make clear the characteristic efficacy of the several subjects in promoting the realization of the aim of education, and to determine their relative values in this regard. Such study gives the teacher perspective. While it dignifies his own subject, it enables him to see what it cannot do as well as what it can do. He learns its *specific* and its *general educational* values; *i.e.*, he learns to what extent its data are involved in other subjects, and how far its method is applicable to other subjects, and to what extent its data and method are restricted to its own range.

(*b*) This means the endeavor to find and provide for the many natural associations between the different subjects of instruction, so that the pupil's acquisitions may thereby gain in significance and permanence; and also that the development by the pupils of the important habit of seeking and holding fast the relations between all their acquisitions, may be promoted.

(4) Some study of the *general principles of method.* Broad generalizations only are desirable. Method is best studied in detail in the form of methods of teaching individual subjects in which general principles are applied and illustrated.

(5) The study of the *general principles of discipline,* including moral training.

(6) The *general principles of school hygiene,* including (*a*) *the hygiene of buildings,* (*b*) *the hygiene of pupils.*

(*a*) Including systems of heating, lighting, ventilation, and school furniture.

(*b*) Including the general laws of health and physical culture.

3. The third feature of professional training is the *history of educational theories and practice.* In education, as in all other human activities, we cannot dispense with the lessons of past experience. "If we ignore the past, we cannot understand the present or forecast the future." Hence the future teacher should study the history of education in order that he may become acquainted with the most important educational classics, and thus obtain foundation for the criticism of present theories and practices in the light of their historical evolution, and incidentally acquire many rules for guidance in the actual work of teaching. Such study naturally includes a brief consideration of education in Greece, Rome, and the middle ages. Much more attention should be given to the history of education and teaching since the Renaissance in Europe (England, France, and Germany), in order to trace the gradual development of modern ideals and practice, and to the history of education and teaching in the United States. Such work, in addition to the instruction, should require much reading on the part of the student, and frequent historical and critical summaries and essays.

4. But the professional student cannot be content with scholarship, educational theory, and the history of educational theories and practice. He must study the *organization and work of present school systems in actual operation;* he must know the constitution, powers, and duties of school committees; he must be familiar with

the means available to the teacher for the realization of his ends; he must know some of the practical daily problems of organization, management, and teaching, and must learn how those problems are to be met.

The fourth feature of professional training for secondary-school teachers, and for those who look forward to the higher positions in the educational field generally, is, accordingly, the *study of the organization and management of school and school system, including courses of study, supervision, and teaching.*

Such study should enable students to become familiar with and to understand the organization and administration of schools and school systems through direct observation and comparative study. In studying the school systems of American cities, a detailed examination of their courses of study should be undertaken, and the principles on which any course of study should be based should be discussed. The duties of superintendents, principals, and teachers should be considered. Attention should be given to details of school management, such as the management of classes, examinations and promotions, discipline; and some attention should be given to methods of teaching the elementary subjects. Students should observe, under direction, the administration and work of public schools and school systems, and of academies in the vicinity. Such study of the actual work of teaching and administration should be pursued regularly and persistently; at first for general impressions, then for details. Frequent reports of the visits for such study should be made, orally and in writing, and these reports should give rise to much classroom discussion. In this way each student should make a general comparative study of many schools, and a more detailed study of the teaching in all the grades, including the high school, of at least two school systems in his vicinity, if the locality affords opportunity for such study; otherwise this detailed study should cover the teaching in all the grades of at least two schools below the high school, and, of course, the high-school grades as well. Students should also be required to acquaint themselves with any supplementary activities of the schools they study, such as the work of literary or scientific societies or clubs. Meanwhile they should follow a prescribed course of reading on administration and teaching, and the instruction they receive should aim to make all their work significant and serviceable. Toward the close of the period devoted to this study of administration and teaching an opportunity should be given to students to specialize in the direction of the particular subject or subjects they expect to teach. In that subject (or those subjects) the student should study carefully all the teaching resources—text-books, reference books, and apparatus—and present critical estimates of the relative values of the books and apparatus he finds in use, or which he himself recommends; and he should study with special care the teaching of that subject (or subjects) from the beginning, wherever they may be, through the high school.

Finally, each student should be required to submit a thesis on the organization and administration of a city school system, in which

special attention should be given to the course of study, together with direction for its rational and effective administration. In this thesis particular attention should, of course, be given to the student's specialty, for which all the details of the course of study, teaching resources, and methods of teaching should be fully treated.

Also, near the close of the period devoted to the work just described (or after that work is completed), systematic instruction in methods of teaching the several subjects in a secondary school course of study should be given by college instructors and by the best instructors that can be procured from the secondary school.

Through their study of the teaching in the schools, the students have learned how portions of the different subjects are taught by individual teachers. Such study was necessary in order to render a systematic presentation of the methods of teaching the several subjects significant. They still need a systematic presentation of the method of teaching each subject for the sake of definiteness and completeness. Such instruction should be obligatory for each student so far as his own specialty is concerned. It should, of course, cover the planning and methods of conducting class work under the conditions obtaining in public schools and academies.

When this work has been completed, two or three State school systems and two or three European systems—say the school systems of England, France, and Germany—should be studied. Every college or university offering opportunities for professional study ought also to provide special opportunities for teachers already in service who seek assistance and guidance in the study of their profession, or who wish to make a special study of particular problems. Such opportunities many teachers will find in the work already described; but for the most advanced students a pedagogical seminary should be provided. In this seminary, topics for prolonged study should be suggested by the instructor or proposed by the students. Each man having selected his topic, the work should proceed by the usual methods of university study; namely, investigation and discussion.

A model school, which in the construction and complete equipment of its building should exemplify the best modern ideals, which should comprise all the grades from the kindergarten through the secondary school, and which in its organization and work "should represent the finest results of the teaching art," would be an invaluable aid to the student of education and teaching. Such a school should exhibit in itself all the best features of all the schools which the students have studied. It could never render unnecessary the comparative study of schools and school systems described above: for the students need breadth of view; they need to know *what is* as well as *what should be*, and what the conditions are under which they will have to attempt the realization of their ideals. This breadth of view and this knowledge can be obtained only by studying the schools as they are. Such a model school should be placed in charge of the professor of education and teaching, and it should be independent of all control except that of the college or university authorities.

Such a school would be a model school in the proper sense of the term; it would not be used by the students for "practice-teaching." No school can be, at the same time, both a model school and a practice or experimental school. There can be no satisfactory practice-teaching—*i. e.*, no teaching that is really worthy of being considered "apprenticeship teaching"—unless the students carry, for a sufficient time, the full responsibilities of the regular teachers. But in that case the school would manifestly not be a model school. A school in which much of the teaching was done by inexperienced teachers could not exemplify the highest teaching art.

Concerning the utility of practice teaching, in general, except that of an enlightened beginner carrying the full responsibility of a teacher in charge of his first school or class, I have grave doubts. I am inclined to believe that the best preparation for shortening and rationalizing the inevitable period of experimentation which every inexperienced teacher undergoes is the scholarship, professional insight, and enthusiasm, provided for in the training described above, without the attempt to force experience in teaching—an attempt that is almost sure to check enthusiasm and spontaneity, and may substitute mechanism for life in the teacher's work.

Provision for such professional training as has been described should be made by every college and university the location of which renders the actual study of many schools possible. When the location is unfavorable to such study, so much of this training should be provided as can be profitably undertaken. College men who look forward to teaching in secondary schools will never seek professional training at the existing normal schools, and it is not desirable that they should. The difference between the scholarship and developed intellectual power of a normal-school student and of a college man is too great to make it possible or desirable to give the college student his professional training at the normal school; and the college education is a fundamental requisite for the secondary-school teacher. The professional training of the college man must, therefore, be provided by the colleges and universities, if at all. The necessity for such training is no longer in dispute. It only remains for principals of secondary schools and superintendents now in service to demand professional training for all teachers, and to induce their school committees to re-enforce this demand by making it difficult for any inexperienced teacher, who has not had professional training, to find employment, in order to cause the colleges and universities of the country to make suitable provision for such training. The duty of principals and superintendents to the profession is plain. Will they do it?

B. A. HINSDALE, *Professor of Pedagogy*,
University of Michigan, Ann Arbor, Mich.

1. If normal schools or training schools were organized on the proper basis, as sometimes they are, I should say the minimum age ought not to be less than eighteen or nineteen. That is the age at which the average high-school pupil finishes his high-school course.

2. With the qualification inserted in the first answer, I should say that requirement for scholarship in all the branches named should be equal to the standard attained by a good high-school course.

3. High-school diplomas may be properly accepted, provided the normal-school authorities have examined the work done in the high school, including its course of study, and have found everything satisfactory. Four years should be insisted upon in all cases where the elementary grades are only eight in number. Pupils coming from inferior high schools, or from high schools with which the normal school is not in touch, should be examined.

4. If a preparation equal to that described above can be secured, then a two or three years' course would be sufficient, say two years upon the average; but if the normal school is based on the elementary school, as is so often the case to a great extent, then the normal-school course should be six years, as it is in Germany.

5. From one-half to two-thirds of the time should be devoted to study and discussion of the principles of education, etc.; the remainder to practice and to criticism of practice.

6. A text-book in psychology as extensive as Baldwin's elementary book (J. M. Baldwin) should be thoroughly digested. Pupils should prepare and recite lessons, and the whole subject should be illustrated by the teacher or professor.

7. Along all the great lines of child development, physical, mental, moral. By mental I mean not merely intellectual, but the whole range and compass of mental activity.

8. I have no expert opinion on this subject.

9. Principles of education must be deduced from the study of the mind, and from the study of the world, or knowledge, brought into relation. I mean knowledge in the objective sense. It is not sufficient to study psychology abstractly. The relation of various kinds of subject-matter to the mind must also be included. The method may be inductive or deductive, or a combination of both. The latter is no doubt preferable. Sometimes principles may be deduced from facts, but it is equally permissible to state the principles and then confirm and illustrate them by facts.

10. The main lines of educational thought and practice should be followed, particularly since the Renaissance. If the subject is followed intelligently, it will have large culture value. It may be made practical by criticism of false or imperfect views, and of vicious or faulty methods of teaching and government and of school administration.

11. All of the four methods suggested should be combined in judicious measure. Stress should be laid upon the practical side.

12. I think the plan of having a model-teacher placed over every two classes a very good one. I do not think the plan of a model-teacher for each class desirable; it tends to beget dependence and weakness. On the other hand, if there is only one critic-teacher for several pupil-teachers, the oversight is likely to be insufficient.

13. I am hardly prepared to suggest a plan. It scarcely seems to me a "plan" can cut much of a figure. What is wanted is intel*ligent* observation, and that can hardly be reduced to an art.

14. Some suggestions can be made to the pupil-teacher while the work is going on, if they are made in the right way; but most of the criticism must be made after the school is dismissed. It may be either individual or collective, as the circumstances determine. If the same faults have been observed in two or more pupil-teachers, those faults may be discussed in their common presence; but much individual work of this sort will be found necessary.

15. I should not favor the employment of both critic-teachers and model-teachers. The model-teachers should be critic-teachers. The teacher of methodology should also exercise particular oversight, and criticism should be limited to the teacher of methodology and the model-teacher. The pupil-teacher's responsibility should not go beyond two persons. If critic-teachers are employed, and not model-teachers, the answer to the question is, of course, obvious.

16. If normal schools could be organized on what I conceive to be an ideal basis, academical work, properly so called, would be excluded. The only subjects in which formal instruction would be given would be the principles, methods, and history of education, and in the sciences out of which principles and methods of education grow. Still I am inclined to think that it might be well to provide in a normal school for a certain amount of review work in academical studies, for the purpose of keeping the mind of the pupil fresh and bright in these subjects. It is important to keep the minds of such pupils facing outward toward the great kingdom of knowledge. I have spoken of what I conceive to be the ideal. Few, or none, of our normal schools are ideal, however, in my judgment. No doubt it would be found impossible at present to carry out my ideas. These ideas are not carried out in the normal schools of Germany. Most of the work done in the six-years' courses in the normal schools of Saxony, for example, is done in studies, and not on proper professional lines. For the time being, we are no doubt compelled to accept a large amount of academical work in the normal schools; but I think it is desirable steadily to raise the standard of requirement, and steadily to increase the amount of professional work.

17. I know of no particular tests of efficiency that can be applied to such case. The tests are obviously the same as in a school taught by a regular teacher, but somewhat differently applied. The factor of oversight will, of course, be far more prominent. The critic-teacher, or model-teacher, and the teacher of methodology, will naturally look after such teachers much more closely than the superintendent or supervisor will look after the ordinary teacher; still, the final test of efficiency must be the answer to the question, whether the child learns.

18. The diploma of a normal or training school should stand for a certain amount of scholarship, directly or indirectly; for a certain amount of professional study; and for a certain amount of training. As to general scholarship, the diploma would testify directly when a large amount of academical work is done in the school; indirectly when the normal school looks to the high school or academy for general preparation.

I dismiss the subject with observing that my answers have respect to a general ideal much more directly than to the state of things now existing. If I were the principal of a normal school, the practical problem for me to solve would be to apply the general ideas that I have expressed to a particular situation.

J. L. HOLLOWAY, *Superintendent of Schools*, Fort Smith, Ark.

4. If the word be confined chiefly to professional training, the minimum length of the course should be two years. When it is necessary to supplement to a larger extent the professional with scholastic instruction, the usual four-years' course seems to be the most practical.

5. As a rule, the lines should be about equally divided. The natural endowment and tact of the individual is a determining factor. Many have the faculty of imparting knowledge and are born to lead; others are good theorizers, but poor tacticians and executors. The normal-school teachers have the same problems to handle that confront the public-school teachers daily; viz., individual aptitudes, varying temperaments, and other elements of the personal equation.

7. The activity or torpor of certain mental or moral faculties under the excitant of specific instruction or example, the responsiveness of children to certain methods of procedure in their daily training, and the bearing of temperament as related to teaching and discipline, constitute a field of original research at once interesting and valuable. Indeed, I believe until such data are procured and thoroughly assimilated in the professional life of teachers, teaching will remain as it largely is to-day and ever has been—a species of empiricism.

14. This will depend largely upon the disposition of the pupil-teacher. A good plan is to require observing pupils to draught criticisms, which are first inspected by the model-teacher, and to submit only such as will be most helpful to pupil-teachers and the class. In other cases it is well to have a running discussion take place immediately following the dismissal of the class in the model school.

ELLEN HYDE, Framingham, Mass.

3. I should prefer to accept the diploma and throw all responsibility for scholarship on the preparatory schools.

6. Enough to teach the teacher to examine his own mental states and processes, and to observe with interest and some degree of insight the mental exercises and growth of children. Empirically by introspection and observation and as a science of mind, not as mere neurology.

12. A school for practice cannot be a "model" school. In a practice school long experience leads me to the belief that in order to do justice to both pupils and pupil-teachers, and to keep the *school* efficient, there must be a responsible permanent teacher in *every* room, whose principal work and care shall be to keep the

school up to grade, and the pupils in right mental and moral condition. In addition there must be a sufficient number of critic-teachers to give careful observation and criticism to the work of the pupil-teachers.

GEORGE H. MARTIN, Lynn, Mass.

7. During the period of training, the students should use chiefly the results of other people's observations of children. But they should be taught the most profitable lines of child-study and the best methods of pursuing them.

12. In my judgment, a *model* school and a *practice* school should be two distinct institutions, with different functions and a different organization. In the model school each class should have its own teacher, whose work should never be interrupted by apprentices. In the practice school the pupil-teachers should have full charge of classes for a limited time, under the supervision of experts.

F. F. MURDOCK, Bridgewater Normal School.

6. Psychology should appear twice as a distinct subject in the normal programme.

(1) At the beginning, the mental activities should be observed sufficiently to enable students thereafter to recognize the activities employed in gaining knowledge while acquiring the knowledge.

(2) At the end of the course, to derive (?) the data for the science of psychology, or so much of it as is necessary for intelligent and appreciative application of fundamental psychological and pedagogical truths.

The knowledge should be acquired under skilled direction: (*a*) by observation of self-activity, of activities of other adults, of child-activity; (*b*) by directed reading and discussion.

10. History of education—to be worked out on the "laboratory" plan, the range of books and passages being to a considerable (two-thirds) degree indicated by the instructor Afterward a brief compendium should be used as a means of review if desired.

So much should be learned as would enable students to know and appreciate the valuable addition which each educator studied gave to education, thereby increasing zeal and willingness to learn and profit by the experience of the past; *i.e.*, to use all the good thus far acquired in educational "wisdom."

FRANCIS W. PARKER, *Principal of the Cook County Normal School*, Englewood, Ill.

1. Eighteen years of age, with exceptions.

2. It is impossible to state requirements for scholarship to enter such a course, in terms of quantity in the studies named from (*a*) to (*l*), inclusive. A good knowledge of all these subjects, with the exception of foreign languages (*j*), is necessary, and should include a very important mode of expression—writing, both upon paper

and the blackboard. The requirements, however, should consist of love, system, ability, and persistence in educative work. I look upon the developed ability to observe, to experiment, to investigate, and to reason, as the essential thing, and not the number of studies or amount of ground gone over. If, however, the pupil has learned to use mental power economically in each and all the subjects named, the basis for personal work would be very much stronger. There can be no marking, measuring, or weighing of quantity learned. My experience is that most pupils who enter from colleges and high schools into the professional training class fail in the essential knowledge of the subjects they have already studied, and in habits and methods of study.

3. Requirements for admission to normal schools depend upon circumstances. Pupils presenting a diploma certifying to a four-years' course in a good high school should be admitted without examination. High schools should be examined upon their pedagogical work, and put upon the list of accredited schools if the teaching and training is satisfactory.

4. Should be at least two years.

5. Impossible to answer the question. All the study in the professional training school should consist in the study of principles and methods of education, and adaptation of subject-matter; should be, in fact, a direct preparation for the immediate practice of teaching. Pupils, when they enter a professional training school, should have their attention turned at once toward the work they are to do, and every step of the work in psychology, principles, methods, and the acquisition of knowledge, should be aimed at the practice. Pupils should be in, or should join in, classes of practice at least one hour each day during the whole course.

6. That psychology which is necessary to the understanding of the principles of education should be studied inductively.

7. Observation of children, psychologically and anthropologically, should be made a principal factor in the study of psychology. If by observation is meant the observing of lessons given by practice-teachers, I should say it is of little or no value.

8. I have not sufficient expert knowledge to answer the question.

9. All the principles of education should be derived directly from the laws of the mind. To answer the question "In what way?" is to present the whole subject of the science of education.

10. The main lines of the history of education should be studied; the lives of great teachers and reformers in education should be known, for instance, Socrates, Comenius, Ratisch, Franke, Girard, Pestalozzi, Diesterweg, Herbart, Froebel. The history of education should be turned upon the study of the principles and methods of education.

11. Refer you to plan given in report (sent herewith) of the Cook County Normal School.

12. There should be a regular teacher placed over each class or room. It is a great mistake to have a model-teacher, so called, placed over two rooms. All the practice-teaching should be under

the immediate direction of a critic-teacher or regular teacher of a room, and this teaching should be supervised by the special teachers in the different departments of the normal school.

13. The whole corps of teachers of a normal school should devote themselves to the careful observation of the work of pupil-teachers; I should prefer that term to *model*-teachers.

14. All criticism should be private and personal. The critic-teachers and special teachers should observe with the greatest care the work of the pupil-teachers, and ascertain their main faults, and the criticism should be made in order to direct the attention of the pupil-teachers to their own mistakes, and how they can be obviated.

15. Criticism should be made by all the teachers in the normal school.

16. In a strictly professional training school, a school parallel with a school of medicine or psychology, there should be no strictly academic work.

17. A pupil-teacher's efficiency should be tested by the ability to govern, teach, and train classes of pupils.

18. Diplomas should be granted upon the ability of a pupil to teach school.

SARAH E. SCOTT and EMMA L. JOHNSTON,
Training School for Teachers, Brooklyn, N. Y.

2. The scholarship resulting from a twelve-years' course in English, mathematics, natural science, physical culture, music, drawing; an eight-years' course in history; a two-years' course in Latin, and a one-year's course (at least) in a modern foreign language.

7. At first the child-mind should be studied from books and by means of lectures. When pupil-teachers have learned the formulæ for observation work, they may be given opportunity to record and report observations of particular children.

8. The sense-organs, especially those of sight and hearing, should be tested. This is done in order to seat children properly, to regulate the light, the blackboard work, and the amount of individual attention bestowed. The ordinary letter-cards and the voice may be used for these tests. The elaborate apparatus used in some universities is out of place in the ordinary city training school.

9. During the first half-year of the course, the students should be led to deduce the principles of pedagogy from the truths of psychology. During the next year the students should be taught to apply these principles to methods of teaching. During the fourth half-year, pupil-teachers should use these principles as the basis for a criticism of the lessons observed or given by them in the practice department.

11. By writing outlines before lessons are given, and after principles have been discussed. By giving certain lessons to fellow pupil-teachers for the purpose of awakening discussion and criticism—the lessons being those intended for the older children. Lectures may prepare the way for these outlines of lessons, and

the outlines may furnish texts for other lectures. Books and periodicals devoted to methods may be used after pupil-teachers have been led to devise methods of their own.

17. Until a pupil-teacher has shown by her responsiveness in the daily lessons that she possesses the power to comprehend the principles of pedagogy, she should not be allowed to outline lessons for children. Until she can write a good outline of a lesson, she should not be allowed to give the lesson. Until she can give the lessons previously outlined by her and criticised by her teachers, in such a way as to hold the attention of a class of children, she should not receive a diploma.

APPENDIX II

OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE CORRELATION OF STUDIES IN ELEMENTARY EDUCATION

The following are the questions in answer to which the opinions were written:

1. Should the elementary course be eight years, and the secondary course four years, as at present? Or, should the elementary course be six years and the secondary course six years?

2. Has each of the grammar-school studies — language (including reading, spelling, grammar, composition), mathematics (arithmetic, algebra, plane geometry), geography, history, natural science (botany, zoölogy, mineralogy), penmanship, drawing, etc.—a distinct pedagogical value? If so, what is it?

3. Should other subjects than those enumerated in the second question, such as manual training (including sloyd, sewing, and cooking), physical culture, physics, music, physiology (including the effects of stimulants and narcotics), Latin, or a modern language, be taught in the elementary-school course? If so, why?

4. Should the sequence of topics be determined by the logical development of the subject, or by the child's power to apperceive new ideas? Or, to any extent by the evolutionary steps manifested by the race? If so, by the evolution of the race to which the child belongs, or that of the human race?

5. What should be the purpose of attempting a close correlation of studies?

(*a*) To prevent duplication, eliminate non-essentials, and save time and effort?

(*b*) To develop the apperceiving power of the mind?

(*c*) To develop character,—a purely ethical purpose?

6. Is it possible on any basis to correlate or unify all the studies of the elementary school?

7. If not, may they be divided into two or more groups, those of each group being correlated?

8. Is there any way of correlating the results of work in all the groups?

9. What should be the length of recitation periods in each year of the elementary-school course? What considerations should determine the length?

10. In what year of the course should each of the subjects mentioned in questions 2 and 3 be introduced, if introduced at all?

11. In making a programme, should time be assigned for each subject, or only for the groups of subjects suggested in question 7?

12. How many hours a week for how many years should be devoted to each subject, or each group of subjects?

13. What topics may be covered in each subject, or each group of subjects?

14. Should any subject, or group of subjects, be treated differently for pupils who leave school at twelve, thirteen, or fourteen years of age, and for those who are going to a high school?

15. Can any description be given of the best method of teaching each subject, or group of subjects, throughout the school course?

16. What considerations should determine the point at which the specialization of the work of teachers should begin?

17. On what principle should the promotion of pupils from grade to grade be determined? Who should make the determination?

EMILY G. BRIDGHAM, *Grammar School No.* 3, Brooklyn, N. Y.

9. The attention of young children cannot be long sustained upon one subject, and primary instruction should be presented in smallest details. The length of period of recitation cannot be exactly prescribed, as the lesson should cease whenever interest flags. No child in elementary school can, with profit, be kept longer than forty minutes upon a memory, or verbal, recitation ; in the primary grades, twenty minutes should be the maximum.

Considerations which determine length of recitation should be : 1. Interest in the subject ; 2. The relation of the subject to other topics of the day ; 3. The relation the portion of lesson bears to portion assigned the class.

10. The introduction of any study into school course should be guided by its relation to child's present experience and lines of interest. Too many studies are advocated because of their supposed practical usefulness in after life.

When the broadest view of a teacher's work becomes more nearly universal, and when very much less teaching is done for examination, there will be no danger in crowding the curriculum of infant years. "Children are not worked to death," says President Eliot, "but they are bored to death." It is better to give many subjects of many-sided interests to children, rather than dole out to them a few matters for the sake of thoroughness in them. The powers of observation, which children possess in such keenness, should have abundance of material for their fostering. Children may, at first, be permitted to flit from flower to flower, before settling down to thorough detail ; for thoroughness requires a concentration of mind and a tenacity of purpose not to be expected of the young.

Language (except grammar and composition).....1st year.
(Synthesis of sentences as soon as permissible.)
Composition.....5th year.
Technical grammar.....7th year.
Arithmetic..... 1st year.
(Number first presented in concrete, as soon as possible taken in abstract. Examples requiring maturity of thought omitted in grades below high school.)
Algebra. Taken slowly ; equation made prominent.....7th year.
Geometry (inventional).....last half of 7th year.
(With *time* given for inventive genius to bud.)
History..... .....5th year.
(Narrative from general history, leading to biography and American history.)
Nature studies..... .....4th year.
(Observation-work 1st year.)
Penmanship and drawing and music.....1st year.
Physiology.....7th year.
Physics..... .....6th year.
Physical culture.....1st year.

17. If success of a teacher were not so frequently based upon results of her class at final tests, thus rendering her loath to part

with creditable pupils, promotions should take place whenever child is able to do work of succeeding class.

Pupils who fail to do the work of a grade in the time allotted would be greatly benefited by reviewing the work with another teacher, and perhaps with different books. The establishment of duplicate grades, at certain points, would prove advantageous.

Class teachers are not infallible in the estimate of their own work; therefore, as a requirement for promotion, it seems advisable to use, in addition to teacher's estimate, a written test made by some one else.

Examinations have been greatly abused, it is true; but this abuse has arisen from lack of pedagogical skill, for these crucial tests need not always occur at close of term, nor need they ever be held at announced or stated periods.

A written examination along same lines which teacher has pursued, and conducted by a principal whose supervision has been a guidance and an inspiration, would, in my judgment, result in improved material for advanced classes.

W. M. BRYANT, *High School*, St. Louis, Mo.

1. Elementary course ought to remain eight years, as at present, especially on account of difference in modes of discipline.

2. I consider the pedagogical value of the grammar-school studies to be as follows:

(1) *Language* is the objective form of thought. Concepts can be matured only through mastery of names as objective forms of concepts. *Spelling* (always written, of course), in connection with elementary etymology, aids in rendering concepts precise through the more precise apprehension of their objective forms. *Grammar* classifies the mind through the whole range of logical forms; "terms" (as objective forms of concepts) being specially defined through etymology, "propositions" through the study of simple sentences, and the "syllogism" (informally) through the study of complex and compound sentences. In etymology, the child is familiarized with the *elements* of thought (*i. e.*, concepts). In syntax, he is exercised in the analysis and synthesis of the actual forms of explicit thought, which consist, first, in the comparison of concepts, and, second, in the comparison of judgments (through their objective forms, viz., propositions). *Reading* is the practicing of the critical power thus trained, while composition is (predominantly) the practicing of the constructive power thus developed.

(2) *Mathematics* has the pedagogical value of strengthening the demand for precision of forms. It insists upon perfection of results, refuses credit for approximate results. In arithmetic and algebra it compels attention to the relations involved, through extreme abstractness of the symbols employed. The study of geometry disciplines the imagination to rigid exactness of form. It disciplines the understanding to the recognition of identities in types of forms. The *limitation* of mathematics is that it emphasizes

identity to the exclusion of differences, rather than identity as in the midst of differences; that is, it subordinates difference to identity instead of co-ordinating it with identity. It even attempts to eliminate the difference between difference and identity; as when it atomizes the curve, and thus sees in it only a succession of "straight lines," these being conceived to be such only when "infinitely short," *i. e.*, only when they have ceased to have dimensions, *i. e.*, when they have ceased to be lines at all. It deals, in fact, only with extensive quantity, and ignores intensive quantity in its essential character of *quality*. Mathematics thus proves inadequate as a means to discipline the judgment. This, indeed is no "fault" of mathematics, but only its inherent *limitation*.

(3) The pedagogical lack on the part of mathematics is supplied, in simple form, by the *natural sciences*. In its entire range *physics* is, in large measure, nothing else than applied mathematics, and hence extends discipline in intellectual habits of precision. But, also, as dealing with concrete phenomena, it serves to exercise both understanding and judgment: the former in recognizing identities (classifying modes of energy, the special forms involved in applied mechanics, etc.); the latter in estimating differences (as of fibers of materials, various phases of strain, effects in change of form of mechanism, as in levers).

Yet within the sphere of the grammar school but little of explicitly quantitative physics can be made use of. Only the descriptive phases illustrated by actual experiment and embodying in the simplest way the fundamental principles of the science can be successfully dealt with by pupils under fourteen years of age. For such pupils (those of last four years of grammar-school course) a graded series of experiments has the pedagogical value of stimulating carefulness in observation of details, on the one hand, and of awaking interest in the universal (however abstract and mechanical) aspects of energy, on the other. *Chemistry*, again, even in such simple experiments as are applicable here, not only reveals the special relation between quantity (in its extensive aspect) and quality (which is merely quantity in its intensive aspect), but it also opens the way for the comprehension of the inner mechanism of organic processes. And, again, the elements of *biology* serve specially well as a means to cultivate the power of accurate observation (*i. e.*, the exercise of perception regulated and clarified through direct subordination to reflection), just as they serve further to awaken the mind to a recognition of the universal and (as compared with those unfolded in physics) highly concrete aspects of energy as manifested in the various types of organisms, including the whole process of the evolution of the individual as the concrete embodiment of the type, work specially adapted to exercise of judgment.

(4) *Geography* is the co-ordination of organic and inorganic forms with special reference to place of abode and means of subsistence for man; as

(5) *History* is the tracing of the process of human evolution as taking place under such conditions. It is, in fact, through the study of the natural sciences, supplemented by geography and his-

tory, that the individual is made clearly aware of the world as his own immediate, concrete, inexorable "environment" in the sense of that total-sum-of-conditions upon actual rational relation with which his own evolution as a normal individual depends. The study of the natural sciences (whether in elementary or advanced form), supplemented by the study of geography and history, has, therefore, this twofold pedagogical value: (*a*) that in such study the mind is trained intellectually to observation—*i. e.*, the recognition of universal modes of energy and types of forms as manifested in particular examples; and (*b*) that there is awakened and stimulated the ethical conviction that only through law and order is any real life for man attainable.

3. I consider *manual training* desirable as part of elementary education in so far as it serves to render pupils clearly conscious (1) of the peculiarity of textures of woods and metals, etc., (2) of the chief (geometrical) forms involved in manufacture, and (3) in so far as it serves to bring eye and hand into definite practical subordination as actual *organs* of the mind. *Physical culture and physiology* I would admit to a limited measure of time and attention upon the same ground (of increased efficiency of physical structure as organic to mental function), carefully restricting them within that limit. I would include *music* as the normal, most direct, and most adequate form in which the emotional aspect of the mind can be expressed. I would introduce *Latin* as early as the beginning of the seventh year; and this for the purpose of emphasizing the significance of variation of form as a means of precisely expressing the various shades of meaning involved in the same universal concept. One of the *modern languages* ought also to be studied, beginning with the sixth or even fifth year; and this for the purpose of comparison as between different forms of expressing the same general degree of (modern) thought. For this purpose the language of one of the more highly cultivated modern nations would, of course, prove most serviceable. (The less highly cultivated nations are, in effect, not "modern.") Hence either German or French or Italian should be chosen.

The study of any foreign language (but most of all a highly developed one) must react upon that of the native language, thus rendering the consciousness of the native forms of expression more precise, and, through this, clarifying the thought and invigorating the whole mind of the individual.

4. Sequence of topics for pedagogical purposes must of course first of all bear reference to the order of development of the individual mind. For this reason, as far as practicable, the pupil ought to be led through observation of particular instances to the recognition that these are really *only* particular instances of universal forms, types, principles, truths. For the teacher these universal aspects are, indeed, presuppositions — having become such in explicit degree through repeated tracing of the whole ground. For the pupil they are unknown and (mainly) unsuspected. For him the course is one of discovery (induction). For the teacher the course is one (largely) of demonstration (essentially deduction,

though formally induction). It is, in truth, thus only that he can securely lead the pupil through the noting of particular facts to clear consciousness of universal principles. The process will no doubt conform mainly to the essential evolutionary steps of the race (both that particular race to which the child belongs and to the human race in general).

5. The essential purpose in correlating studies is that of perfecting the total complex medium for the unfolding of the total complex unit, mind, as at once intellectual, ethical, and (in healthy sense) emotional.

6. All studies, elementary and advanced, can be correlated under the complementary aspects of *physical and spiritual*. Outer and inner *mathematics* is the science of universal abstract *forms*. *Physics* and *chemistry* are the supplementary aspects of the universal abstract science of *forces* (modes of energy). *Biology* is the science of the fundamental concrete unfolding of *types* of organic units expressing essential modes of energy in clearly defined forms. Man is the unit in which all these converge (he is literally the "microcosm"), and hence (as intimated above) *geography* is properly to be regarded as simply a descriptive summarizing of the total sum of outer conditions of human development, as *history* is the tracing of the outlines of that development, while *language* is at once its record and also its subtlest medium.

9. Length of recitation ought to be determined by average power of attention on part of pupils of the given grade.

14. No. The subjects being chosen presumably with reference to truest growth of mind in any case.

15. No. Method is first of all and essentially an expression of the personality of the teacher. If personal idiosyncrasies are so great as to render the work capriciously only one-sided, that is evidence that the teacher has not been really educated, or that he is inherently not well balanced, and hence ought not to be allowed a place in the schoolroom at all. Sound of mind (intellectually and ethically) and well educated, the individual is his own best method. Subjected to any prescribed "method" (in point of detail), his work must become mechanical, *i. e*, brutal—ineffective for good, effective only for evil.

16. To this I answer: *Effectiveness of total work*, (1) intellectually, (2) ethically. The higher the degree of actual cultivation and self-command on the part of the teacher employed, the earlier can specialization be profitably undertaken. Ideally it ought to begin with the beginning of the first day of the first year.

17. On the principle that those who have taught them know best what their actual attainments are. As a check upon one-sidedness of inexperienced teachers, an examination on a set of questions from the "central office" ought doubtless to be held. But in every case this again ought to be conducted and the papers marked by the teacher who has had charge of the class in the given subject.

B. T. DAVIS, *Superintendent of Schools*, Winona, Minn.

10. Elementary education should be introduced with kindergarten instruction at about four years. The child will begin by acting and doing, the handling of things and the working out, through forms, his ideas and thought as developed to him. He will begin by the handling of forms, seeing and observing; following this by making and representing, and will be gradually led from the very concrete representations to more abstract written forms, following with oral and written language, through which reading soon becomes a part, and numbers have been a concrete companion from the start. Color has also been a companion of form. Nature study has been introduced from the very start. The child has been taught to observe, interpret, and express the ideas and thoughts arising in its own environment. During the first and second years language, with all of its parts (written and spoken, etc.), including reading, science, penmanship, drawing, music, and physical culture, have all formed parts of the course of instruction, giving suitable variety to claim the child's interest and attention, and calling forth all of the activities of the child's nature. At the third year, geography should be introduced, although it has been formerly touched upon as drawing or form, with perhaps related place exercises. Although introduced as geography in the third year, it is still largely a matter of form, place, and physical representation, gaining its more distinctive character as the work progresses and the child's strength and power of comprehension increase. History should be introduced in the form of stories and biographical sketches, and more formally as narrative reading or story work, about the fifth year. Handcraft, in various forms, should be correlated with drawing from the very start. Later in the course, special drawing may find its suitable time and place in the various subjects of the course, and the drawing time may be quite largely devoted to handcraft, drawing being its constant companion. Physiology, or hygiene, and physics should hold their proper and related places in the science work above indicated. Modern language or Latin might find a suitable place in the seventh or eighth year. The elements of algebra or geometry should find a correlated relation to arithmetic, and should have a place in the seventh or eighth year in this form, while much of the more simple introductory elements of geometry have found a correlated place in form study (drawing) almost from the very start.

11. In making a programme, time should be assigned for each leading subject. Those things introduced wholly in a correlated way should have a time only as they appropriately appear in connection with the subjects of the formal programme.

12. In the first, second, third, and fourth years of the course, three hours each week should be devoted to drawing (form, color, and handcraft); three hours to reading (spelling, reader work, language, and supplementary and original composition); two and one-half hours to language; two and one-half hours to writing; three hours to numbers; two and one-half hours to physical culture and recrea-

tion; three hours to general lessons (elementary science, history stories, fairy tales, etc.); the same order should be observed. In the third and fourth years, geography will find a place by increasing the time of the school day thirty minutes, giving two and one-half hours each week to this subject. In the fifth, sixth, seventh, and eighth years, history should find a place by reducing the time given to writing, reading, and general lessons. This subject should occupy about three hours each week during the last four years of the elementary course. Where algebra and geometry are introduced in part of the eighth year, it is substituted at the time assigned to numbers. Where Latin or a modern language is introduced, it should appear at the language period, which otherwise should be interpreted as English.

13. The answer to this question may be inferred in part from the answer given to number 12 in the parenthetical parts. While these topics have separate times on all formal programmes, the correlated relation should not be overlooked. The work in drawing should early become a means of expression, and find a place in nearly all parts of the programme. Language should pervade the entire programme, and in this sense the whole programme may be said to be language; yet a language period is necessary, that some of the more important language forms and technical points relating to this subject may find a special time and a different opportunity for treatment. Spelling has a relation to every subject and a place in every subject, yet the attempt to teach spelling wholly in this correlated way is to neglect it. There must be a special time at which spelling is systematically and regularly considered. Otherwise, it is neglected, and the result is poor spelling. Reading early becomes a part of the number work, the language work, general lessons, geography, history, and music. Yet we must have a special time for reading, that will give especial attention to the expression and the details of the subject. This time may be reduced later in the course, if the work has been well done at the beginning. General lessons should have a very intimate and direct relation to language, as do geography, history (when introduced), furnishing the subjects for thought; the thought side being developed in these classes, and the language side receiving especial attention in the language class and at the language hour. This question, to be fully answered, would require tedious enumeration. I will not expand further, but will refer you to the course of study in the manual for these schools, which I send you under another cover.

B. C. GREGORY, *Supervising Principal of Public Schools*, Trenton, N. J.

1. I cannot see any reason for reducing the elementary course to six years. I think, however, that such a reduction is to be inferred from the recommendations of the Committee of Ten. Ordinarily I should regard the termination of the elementary course at any given point as a matter purely of convenience, were it not

for the question of departmental teaching which enters into the question. The secondary schools necessarily imply departmental teaching, and I am opposed to departmental teaching until the child has finished at least eight years of his elementary course; this involves the discussion of question 16. I am very radical on this question of departmental teaching; I do not believe in it at all at any time, but recognize that there comes a time when there is no other method possible. The scope of the subjects taught in high schools is so great that no one man can do more than obtain a fair mastery over one of them; to master several of them is simply out of the question. Departmental teaching is, therefore, forced on us, not because the teaching is better, but because several subjects cannot be mastered by one teacher; I should therefore answer question 16 by saying that the consideration which should determine the point at which the specialization in the work of the teacher should begin is the consideration of necessity. My reasons for objecting to the special-teacher system are the following:

(1) The boy during the grammar-school age needs a teacher's care. She must understand him thoroughly, and a teacher who teaches a boy in all subjects can understand him more thoroughly than a special teacher can; she could adapt her teaching to his peculiar needs with accuracy. The charge against the public schools is, that the children are taken in masses, and their individuality is not considered. The departmental system exaggerates this trouble because no one teacher understands the boy thoroughly. The class teacher can individualize her instruction; she can find out what is his peculiar bent, what subjects can be gone over rapidly, and what subjects can receive more minute attention.

(2) Related to the above is the fact that in specialized teaching just so much time, say forty minutes, must be given to each boy in each subject; each boy must have forty minutes in arithmetic, forty minutes in grammar, etc.; no other state of things is possible where the children spend a certain period in each room. Now, with the class teacher it is ascertained very quickly that some boys do not need forty minutes in arithmetic, but need sixty in language, and the teacher distributes her force so as to bring to bear upon each pupil just what he needs.

(3) Departmental teaching makes correlation of studies very difficult. The tendency of departmental teachers is to consider each his own subject without reference to its relations. I do not say that departmental teachers do this, but that the tendency is in that direction, and to overcome this a principal must give very careful supervision, and when he has done his best he does not obtain from his departmental teachers that correlation of studies which a teacher can who is teaching the several studies to be correlated. The specialized teaching leaves out what is known as co-ordination. One of the evils of public-school teaching is, that each subject is considered entirely independent of the other, and *this* is a most unnatural state of things; for instance, no matter

how carefully a boy is taught writing during the penmanship lesson, he generally considers that he has nothing to do with penmanship when he turns his attention to the language lesson; or he may be very carefully instructed in correct language during the language lesson, and if he has to write an exercise in geography he considers that the rules of language do not apply.

(4) Again, the psychological aspect of correlation, which I discuss below, has a bearing on the case; I think it is impossible to make that psychological consideration effective if several teachers have one pupil.

(5) Again, my experience is that the moment an all-round teacher takes up departmental work she becomes narrow; I have known a few exceptions to this rule, but the rule is as I have given it.

(6) Lastly, if any subject should be specialized, it is moral training, but moral training must take a subordinate place in the departmental system. Where a child has five teachers instead of one, nobody can become intimately acquainted with his moral nature, and I respectfully submit that this is one of the most important features of the teacher's work. The special teacher is not in a favorable position to give this training. She has to overlook it or lose the sense of responsibility which must form the basis of moral training. To the all-round teacher, moral training is an important matter. The teacher of arithmetic, on the contrary, is apt to think that her work is arithmetic, and that moral training is incidental. Moral training requires continued attention, steady effort, and this is a difficult matter where the teacher sees the pupil but forty minutes a day. The special teacher is not in a favorable position to give this training; her responsibility is to the subject she teaches, and she is likely to overlook the necessity of moral training, or at least resort to such temporary expedients as shall secure results while the child is taking his period with her.

I have been a little lengthy over this question because it seems to me that it is the key to the answer to question 1. I believe that the objections I have urged against departmental teaching apply even in the high school; but, as I have said before, in the high school the difficulty of mastering more than one subject is so great that departmental teaching becomes a necessity. I would postpone the departmental teaching to the ninth year, because I believe up to this time the boy can be more successfully handled by the all-round teacher.

I am sorry to find myself in opposition to yourself and many other educators on this subject, but, after having carefully weighed the merits of the question, and been made sadly conscious of the evils of departmental teaching in Trenton, I am compelled to maintain my position as opposed to departmental teaching prior to the ninth year in school.

2 and 3. This is a tremendous question. I fear that my thought is not sufficiently crystallized to answer you very philosophically. Will you allow me to consider questions 2 and 3 as one question, and to present my answer in a somewhat less categorical way than is demanded in your questions? I desire to take the pedagogical

value as the heading under which I would group my answers. I do this because I can answer questions 6 and 7 and 8 in what seems to me to be a more philosophical manner than if I take up each subject by itself. The classification of values which I offer is not very scientific, but, on the other hand, rather superficial It seems, however, to me to be sufficiently exact to furnish a basis for argument, although not exact enough to base a completed scheme of correlation on.

(1) To begin with, some of the studies relate to the physical condition ; these are hygiene and physical culture.

(2) Several of the studies bear a very important relation to the *training* of the body. Penmanship and drawing look to a co-ordination of special muscles. Manual training has for one of its purposes a very important co-ordination of muscles. Apart from the considerations of health, physical culture looks to a co-ordination of muscles.

(3) Several of the studies are partially, and in some cases principally, valuable because they furnish the automatic means by which further acquirements are made possible. Penmanship is valuable largely for this reason. Drawing is valuable to a very considerable extent for the same reason. Language, up to a certain point, is to be considered merely the automatic means by which we receive or communicate thought. Arithmetic has its automatic side, too often left out of consideration.

(4) Several of these studies have an observational phase. The natural sciences are conspicuously valuable because they train the observation. The training in language has an observational side of considerable importance, not always sufficiently considered. Manual training has a very important observational side. There is also an observational side to the teaching of language and even music. Drawing is emphatically an observational study.

(5) Related to the foregoing is the fact that several of these studies deal particularly with the concrete, and are, therefore, related in a very close manner to the observational studies. Among these studies are the sciences, plane and inventional geometry, and manual training.

(6) Several of the studies offer opportunities for the development of the judgment ; they involve not only observation but comparison, and therefore they tend in a peculiar way to exactness in thought and in manual operations. Manual training is one of these studies, geometry is another, algebra another, and drawing another.

(7) The reason under various aspects is trained by mathematics, history, geography, sciences, and language. In some cases the inductive processes are developed and generalizations are made, and in other cases the reasoning is deductive. Algebra, for instance, is peculiarly valuable because it favors the process of generalization.

(8) Imagination is trained in geography, in history, in language, and frequently in the teaching of natural sciences.

(9) Most of the studies are, to a greater or less extent, memory studies ; some of them have been made too much so.

(10) Studies which develop the æsthetic emotion deserve separate consideration. Drawing, music, natural science, and literature deserve consideration here. This may be said to be covered by the studies which develop the imagination. I have made a separate classification because I wish to lay special emphasis on the *æsthetic* imagination.

(11) Training of the moral sentiments, and therefore the training of the will, call in such studies as history, physical culture, and hygiene, the latter because the consideration of the body tends to the consideration of sobriety, self-control, etc.

It ought to be observed that such distinctions as these, or any other distinctions, do not permit of accurate lines of demarcation; for instance, referring to the studies which are intended to be considered on their automatic side, it is perfectly clear that even in developing automatic power we develop at the same time the observing power, and some power of reasoning and imagination. It will be noticed, further, that in considering the various studies each study falls under several classifications.

Answering question 3 specifically, I would introduce every subject named into the elementary course excepting the languages; by and by they may be introduced, but my observation leads me to believe that children have not the power of comparison sufficiently developed to take in the idiomatic construction of other languages. All they get, even if they are successfully taught, is an automatic use, within very narrow limits, of another language, and I do not see any place for this in the school course.

I have answered your questions in this peculiar way because I wish to base the correlation on psychological considerations rather than on any arbitrary grouping of studies.

4. The sequence should be determined by the child's power to apperceive new ideas. As the apperception may lead in several directions, the *logical* development of the subject should be the secondary consideration determining which of these directions should be taken; this is discussed a little more at length in answers to questions 6, 7, and 8. The considerations relating to "the evolutionary steps manifested by the race" belong to the nebulous matter to which I have referred at the beginning of this article. I mean that the subject seems to me to be in its infancy; it is involved with the most difficult sociological questions, and depends for its answer on the answers to questions which sociology only can give. I have failed to find in educational writings anything more than the most general propositions, and much that is written on the subject seems to me to belong to the domain of platitude. If I should answer the second half of the question directly, I should say, yes, certainly, and I would give the preference rather to the human race than to the race to which the child belongs. I do not mean to imply by what I have said that nothing has been discovered by which we may institute a parallel between the evolution of the race and the evolution of the child. Certain broad propositions are sufficiently clear, but when we commence to deal with details I find myself in very great doubt. I do not think that the evolution of

the race furnishes us as yet with definite standards to aid us in arriving at the truth; I would rather trust to the considerations drawn from embryology than from sociology; I think at present they are far more instructive and definite. One thing is sure: the regular teacher will for a long time be little affected by sociological considerations.

5. Postponed. (See after question 8.)

6, 7, and 8. I cannot approach the subject of correlation from the standpoints suggested in questions 6 and 7, and I am not sure that I understand what is meant by correlating the results of work.

It occurs to me that the word "correlation" is frequently used, like the word "co-ordination," to indicate, not correlation, but some method by which we may teach two subjects at once, as when we teach reading and history by reading history. If correlation be thus limited in its signification, I think that the subject is simplified very much, and becomes a series of devices for combining subjects. My conception of correlation takes in not only this, but also the broader idea involved in the literal meaning of the word; *i. e.*, it looks not only to the combination of subjects, but even, where that is not possible, to correlation. Two subjects may be regarded as kindred, and should be taught in conjunction, the one with the other, even when they cannot be actually combined in one lesson.

With this preliminary statement in mind, I refer to my long analysis under the head of questions 2 and 3. I am aware that this analysis involves nothing new; it enables me, however, to answer questions 6 and 7 more in accordance with my own lines of thinking. The central thought is, that the correlation is based on these conditions, physical or psychical, which are to be associated with any given age or state of progress of children. The kindergarten recognizes this theory fully, and the morning talk is the means of correlation. If this suggestion of Froebel's be extended with suitable modifications to cover the whole of the school course, I think we have a starting point in theory, at least, for the construction of a correlated course of study.

To illustrate, take the child at the beginning of his course of instruction, the classification already alluded to. Thus, the question of health is important; such a treatment of physical culture and hygiene, therefore, as is appropriate to that age, must be given, and those two subjects may easily be co-ordinated. The training and co-ordination of the muscles of the body begin at this point, and, indeed, are exceedingly important. Such training and co-ordination as belong to the age of the child having been decided upon, we may thus select from the subjects of penmanship, drawing, manual training, physical culture, etc., the exercises answering the purpose. These subjects should be correlated with the main purpose in view. Considering the fact already noted, that certain studies are valuable as the automatic means by which every attainment is made, as was indicated in the third class of studies above, the peculiar bent which is to be given to the teaching of penmanship, drawing, language, and arithmetic, from this point of view, is evident. In practice the automatic nature of the result to be accomplished is not usually

kept in view. The means employed in the teaching of these studies are illogical. Again, this time of life is peculiarly the time when the observing powers need training; here is the function of natural science, manual training, music, and drawing, so far as they cultivate the observation.

I have gone far enough to indicate a scheme. Granting that certain physical or psychological objects are proper at a given age or state of progress, these objects furnish the basis of classification under which the correlation is to be made. The arrangement of the programme with this in view is another consideration, to be touched upon later; I frankly admit that it is a very difficult consideration.

There is another correlation which is evident from the classification I have given, and that is the correlation of purposes. In the foregoing classification I have named ten different purposes. I do not consider this as an exclusive list; but, assuming it to be the list for the present, it is easy to see, for example, that matters of health and matters of physical co-ordination are easily correlated. It is also easy to see that the training of the observation can be very closely related in certain stages of progress to the training of the imagination, and in other stages of progress to the training of the reason. The teaching of natural science illustrates this proposition. After the earlier years have been passed, the studies in natural science involve such a close connection between the observation and the reason that the line of demarcation is very hard to draw. This is a case in which two purposes of instruction are correlated in one study. The correlation of two different purposes may involve the correlation of two different studies, as when drawing and geometry are correlated, the use of the observation being correlated with questions of exactness involving the judgment, and even matters of reason involved in the geometrical process. I am aware that this will seem very vague; I offer it merely as a starting point in the investigation of a subject on which, so far, very little that is definite has been added to our knowledge.

5. Yes to (*a*), (*b*), (*c*). A special remark is necessary in connection with (*c*), if I am to understand the development of character as something larger than the ethical purpose referred to in the second half of (*c*). I do not see how the individuality of the child can be developed unless we proceed in accordance with the lines I have marked out, or other lines founded on a similar classification. Reading has no meaning in itself; it does not suggest character development or ethical development, but both are involved in reading. The development of character, however, is a very composite process, involving the development of all the powers of the mind and their physical expressions; the attention should therefore be concentrated on the particular power or function to be developed, and the correlation should be made with this in view.

Referring for a moment to sentence (*b*), I think that the apperceiving power of the mind expresses itself through various channels, and the classification of these various departments of action is not based logically on studies, but on function.

9. I do not try to answer the first half excepting to say, what everybody knows, that the recitations in the earlier years of the elementary course should be short. I think that the prominent consideration that determines the length of a recitation is that of interest; this is especially true in the case of younger children; and as interest has a direct relation to the vital force of the child, the latter is necessarily involved. In later years a very important consideration is the strength of the will, by which the student compels attention to a subject not very interesting. I believe, however, with Sully, that the limit of this power is very soon reached, and we come back, after all, to the consideration of interest. The adjustment of a programme is very important in view of the fact that the vital force of children declines perceptibly during the day and the arrangement of studies. The programme should take into account the decreasing power of the child to attend, and this fact also regulates the length of time which should be devoted to a given study; *e. g.*, the period should not be so long in the afternoon as in the morning. Again, those studies which can be more easily made interesting will admit of longer periods than those studies which cannot be made so interesting. And, finally, the ability of the teacher to engage the interest of the class is a very important consideration. A teacher whose power is limited must arrange her programme with shorter periods than a teacher whose power is greater in this respect.

10. To answer this question in full would take more time than I have to give. Will you pardon me if I refer you to my course of study, recently issued, in which the matter is pretty fully discussed? If you have not a copy, I will try to send you one. The subject is also discussed in the latter part of my last report. In general, I desire to say, that the subjects in 10 should be introduced earlier than they have been introduced. The pedagogical considerations referred to in answer to questions 2 and 3 indicate the basis on which an answer is to be constructed.

11. My thought is that all programmes should be elastic and should vary from day to day; this need not prevent the teacher from making a formal programme subject to variations. I do not see how, at present, a programme can be made up that is not based on subjects; but if the elastic nature of the programme is kept in mind, this need not interfere with the carrying out of the propositions referred to in my answer to questions 6, 7, and 8. Each of the studies of the course at a given period of the child's advancement has some prominent characteristic. Thus, in the earlier years the prominent function of the training in science is to develop the observation; later on it becomes a subject in which generalization is more important than observation. Now, in the earlier years of the course, during the time assigned for natural science, it is entirely feasible to introduce language if the language is understood to be a means of recording the results of the observation, or to introduce drawing with the same purpose in view. Similarly, the language period may be used for the introduction of other studies which are intended to attain the same purpose that is proposed by the teacher

as the principal object of the day's lesson. I do not see that anything would be gained yet by assigning a period to a group of subjects. I think that the development of the subject may some day indicate the propriety of arranging the day's programme on the basis of the purposes of instruction as indicated in questions 2 and 3. The difficulty here is that these purposes are continually running into and overlapping each other ; but this is correlation, and I do not see that it is a serious objection. A programme in which the first half-hour was given to observational studies, and the next half-hour to automatic studies, and the next half-hour to muscular training and co-ordination, and the next half-hour to the cultivation of the imagination, would be a singular programme ; and yet some such plan—not very clear to me, I admit—seems to be the outcome of the reasoning above, and I believe it will yet be found to be the key of the situation.

12. See answer to question 11. I refer you again to my course of study.

13. I refer to my course of study. I do not think that this is a perfect course of study, by any means, but it is somewhat in accordance with the above line of thought, and I would offer it merely as an approximation. I think I could do better if I should try again.

14. No. If the psychological development is followed, there can be no exceptions, and the high school must be made to fit the boy if it is wrong ; the boy should not be made to fit the high school.

15. I refer you to my last report for the year ending August 31, 1893, pages 153 to 186.

16. Already answered under question No. 1.

17. On their ability to take up the work of the next grade, not as ascertained, however, by an examination. The opinion of the teacher should be the important consideration. I am aware that this presents practical difficulties, because there are many teachers whose opinions are not worth considering ; but you must recollect that this objection applies to everything referred to in the whole circular. The method, I think, is the correct one. Teachers must be trained to meet this demand. It will be observed that the course of study proposed in the answers to your circular would enable a child to be promoted much more easily than under former courses of study ; such a course of study would fall under the classification "concentric" or "spiral" courses of study, terms pretty well understood at this time. The fact that a child fails in history ought not to keep him from being promoted, as has been the case in former days. A failure in history may indicate a deficiency of imagination, or it may indicate a deficiency in the reasoning faculty ; and the indication thus afforded ought to be followed, and the deficiency made good if the nature of the child will permit it. This reasoning may sometimes indicate the classification of the child in two classes in different subjects, but should not prevent advancement unless the deficiencies are so general that the child is clearly unable to go on with his companions. This is the basis on which I am working in Trenton, at least.

PAUL H. HANUS, *Assistant Professor of the History and Art of Teaching*, Harvard University.

RAY GREENE HULING, *Head Master of the English High School*, Cambridge, Mass.

SAMUEL T. DUTTON, *Superintendent of Schools*, Brookline, Mass.

AUGUSTUS H. KELLEY, *Head Master of the Lyman School*, Boston, Mass.

FRANK A. HILL, *Secretary of the State Board of Education*, Boston, Mass.

CHARLES H. GRANDGENT, *Director of Modern Language Instruction*, Boston, Mass.

1. We call attention, in the first place, to the fact that in many towns, where the school age is five, the length of the combined elementary and secondary courses is not twelve but thirteen years; and, in the second place, to the existence, in some institutions, of a third division, 9–3, not mentioned in the question. The arrangement 8–4 (or 9–4) seems to us the best of all. We like it better than the 9–3 (or 10–3) system, because we regard three years as too short a time for secondary training; and we prefer it to the 6–6 (or 7–6) division, because we fear the latter would encourage an early withdrawal of pupils from school. In any case, we favor the separation of the quick from the slow scholars, and the introduction of a double curriculum that will neither retard the progress of the abler pupils nor unduly hurry the duller ones. We believe, moreover, that courses must be so arranged and methods so shaped that the transition from the elementary to the secondary grade shall be scarcely perceptible.

2. Each subject has, in the later elementary period—*i. e.*, after the work has properly diverged into separate but more or less closely correlated subjects—a distinct pedagogical value. What it is in each case has never been demonstrated. In general, it may be said that each subject has a peculiar value for each pupil in at least two respects: (1) for the development of *incentives—mental, moral, æsthetic, constructive*, through *interest;* and (2) for the development of *power* (*to think and to execute*) and of *desirable habits of expression and conduct.* For these purposes the several subjects should be regarded by the teacher as *instruments through which the pupil is to be discovered.* It is only on the basis of such a discovery that the pupil's development of incentives, power, and habits can be intelligently stimulated and guided.

With this general view of educational values in mind, the following details are suggested:

Language and literature are valuable as instruments of acquisition and expression, and literature is especially valuable for its influence on aims and character. Reading, spelling, and "language" are helpful in all stages of elementary education; grammar only in the latest stages.

Mathematics introduces order into man's conception of the world, through number and form, and is further valuable as a means of forming habits of accurate perception of and deductive reasoning on mathematical data. The range of such habits, however, is narrow, and they are not, to any considerable degree, transferable to other conceptions. Arithmetic is, besides its value for commercial purposes, also valuable, like both algebra and geometry, as an aid in the prosecution of other subjects. Concrete geometry has a special value in developing right concepts of the form and measurement of material objects, and demonstrative geometry a similar value in forming habits of deductive reasoning. Inasmuch as the ability to reason is late of development in most children, this form of geometry should be sparingly used in elementary schools.

Geography is useful in leading the pupil to observe, compare, generalize (in a degree), and record facts relating to the earth's surface and its inhabitants. It is adapted to use with children in all but the lowest stages of elementary education, and has, like arithmetic, considerable commercial value. It is an important means of correlating nature study and literature and history study.

History supplies information concerning man's experiences and achievements; and by continually exercising the pupil's mind, at first unconsciously, but finally consciously, in repeated acts of judging and reasoning in regard to the motives and the acts of nations and of individuals, it may be used as a means of developing high aims and habits of judicious thinking about men and affairs.

The value of natural science lies in the readiness with which it lends itself to the formation of habits of accurate observation, accurate recording, and inductive reasoning. The first of these, observation, is the aim to be chiefly sought by this means in elementary schools. Each of the three branches named, botany, zoölogy, and mineralogy, have also some information value, but that value depends somewhat upon the subsequent career of the child.

Penmanship is valuable as a means of communication with others (and doubtless also as an aid to precise thinking).

Drawing gives the mind, through the eye, correct habits of perceiving form and proportion, and through the hand correct habits of expressing these qualities. (Some color training is also wise.) It also creates in many the beginnings of an appreciation of art, and so adds another to the refined pleasures of life.

3. Other subjects than those mentioned above should be taught in the elementary-school course.

Elementary instruction in art should accompany the work in history and literature. For this purpose busts and casts should be available, that the pupils may learn to know and to appreciate these achievements of men, as well as the directly "useful" products of human effort.

Manual training (including sloyd, sewing, and cooking) should be taught in these schools, for its value, (1) as supplying useful information, (2) as a means of developing habits of construction (one form of expression), and (3) as a test of the pupil's aptitude, and so as a guide to his future studies and occupations. (Some

pupils respond to this stimulus who have previously been unresponsive.)

Physical culture, with the element of play made prominent, should be taught in order to counteract the injurious tendency of indoor confinement and other ordinary school conditions, and in order to promote systematically the child's normal physical development.

Physiology (including the effects of stimulants and narcotics) should also be taught, in order that, through accurate knowledge, a motive may be supplied for the continuance of right physical habits. The instruction in physiology and that in physical culture should be duly co-ordinated.

Physics should be taught as a means of inducing good habits of observing and manipulating material objects, and of measuring material forces, and also for its value as a test of aptitudes.

Music should be taught as another means of expression, and for the addition it brings to the pleasures of life.

A second language (in addition to English) should be taught in the elementary-school course, in order that a pupil may early begin the acquisition of two literatures instead of merely one; that he may compare at least two methods of expression of thought; to insure the consequent broadening of his mental horizon; and that he may enrich his vocabulary, quicken his literary observation, and strengthen his power of literary analysis. The second language should be modern rather than ancient, because in structure, in order of words, and in vocabulary, modern languages resemble our own more nearly, and so present less difficulty to an elementary pupil.

4. We understand that the phrase "the sequence of topics" is used by the committee to mean the sequence of different studies as well as the sequence of the subdivisions of a single subject. We interpret the phrase "the child's power to apperceive new ideas" to mean the child's power to assimilate new knowledge with the help of his past acquisitions (both of knowledge and power). We assume that the committee employ the phrase "logical development of the subject" to mean only a deductive or synthetic exposition of the subject, and that the committee believe there is always a necessary conflict between such a development of the subject and the child's power to assimilate the knowledge so presented; otherwise we fail to understand the alternative in the first part of question 4.

We believe that the process by which a child assimilates new ideas may be either an inductive or a deductive process; but that acquisition by inductive processes is the chief mode of normal acquisition in young children, and that acquisition by deductive processes, though beginning at an early age, is normally of gradual development. While, therefore, the child's power to apperceive new ideas is employed both in deductive and inductive acquisition, his normal mode of acquisition is mainly an inductive process; and hence the sequence of topics within a given subject should be chiefly adapted to those processes. As regards the sequence of different subjects, we believe that for the first two or three years of school life the only sequence of subjects aimed at should be the

sequence involved in an orderly presentation of the whole field of knowledge. After the first two or three years, however—that is, after the subject-matter of instruction begins to diverge definitely into several distinct studies—the child's power to apperceive new ideas will often make it possible and desirable to present a subject in accordance with its logical development. This is possible, because, through proper instruction—that is, through adequate and telling illustrations and through the correlation of different topics in the same subject and of one subject with other subjects—knowledge may be assimilated by a deductive process without rote learning or diminution of interest or self-activity on the pupil's part; and desirable, because the child should, with increasing maturity, receive training in the acquisition of subjects through their logical development, and also because there is often a considerable saving of time in such development of a subject over what would be needed for a purely inductive development. Both inductive and deductive modes of developing subjects, therefore, seem to us desirable. The relative use to be made of each of these processes in every lesson, or in successive years, must be determined by the needs of the children and the tact and judgment of the teachers.

Second part of 4. "The evolutionary steps manifested by the race" seems to us too vague a phrase to be more than generally suggestive in a matter involving such specific details as the sequence of subjects or topics. The phrase, of course, suggests that, in many respects, ancient races were childlike, and that from the interests of these races we may learn something of the interest of modern children; and that, in a general way, these interests may be made serviceable in the choice of topics for the instruction and entertainment of modern children. But to assert that the sequence of topics employed for the education of modern children should be determined by the evolutionary steps manifested by the race is to assume a knowledge of such a close parallel between these steps and the mental and moral development of children as we do not possess. To attempt an arrangement of topics with such a vague determining principle we believe to be impossible without much forcing.

5. We answer yes in reply to (*a*) and (*b*). In place of (*c*) we prefer the following statement:

To establish as many natural associations as possible between the pupil's acquisitions, so that the habit of forming associations may be developed. This is only another way of saying that close correlation may help the pupil to form the habit of seeking and holding relations between all his experiences. The significance of all acquisitions lies in their relations. This habit tends, therefore, to make a pupil not merely a learner, but ready in investigation and application; and especially during the later years of the grammar-school period and all of the high-school period this habit tends to help in developing dominant groups of ideas. These dominant groups of ideas involve the growth of permanent interests and incentives which may lead the pupil to mental and moral stability. Moreover, such dominant groups of ideas often enable him to decide intelligently upon the probable forms of activity to which he is best adapted.

This statement is intended to indicate the way in which correlation tends to develop character.

6. In the first two or three years of school life all subjects should be pursued in close correlation. In the later years of the course every subject should be correlated to all others so far as they are naturally related. Certain subjects have natural relations throughout the entire course, and may be grouped for correlation throughout.

7. There are certainly two great groups; viz., nature studies and history and literature studies. Geography is a connecting link between these two groups, and, to a certain extent, binds them together.

8. This question has been partially answered under 6. Correlation of the results of work in all the groups we regard as neither satisfactorily possible nor desirable. Complete correlation in a fair sense, that is, in the sense of binding all subjects together through the medium of some selected central subject, belongs to the earliest grades. Specialization limits correlation. Less stress will be placed on lateral relations in proportion as greater stress is placed upon the relations that are consecutive. The best correlation is that which thinks more of the interest aroused and the resultant moral tone than of the union of subjects. True co-ordination is more subjective than objective. It is *quality* of mental effort rather than *quantity*.

9. Recitation periods should be very short; a few minutes only in the lowest classes. They may be increased as the children grow older. Thirty minutes ought not, in general, to be exceeded in the upper grades of a grammar school, although some subjects may receive forty-five minutes or even an hour.

10. They should all (algebra and geometry excepted, unless by geometry, for instance, is meant the recognition, drawing, and mensuration of simple shapes) be begun in the lowest class and continued through the course. Naturally, the simpler facts of the sciences are meant, and nothing like formal study of botany, grammar, etc., in the younger classes. (See report of Committee of Ten, except that biography and mythology should be introduced earlier.)

11. Before an answer can be given to No. 11, such questions as these need to be considered:

Ought not a little uncorrelated work (or work whose correlations are between principles last studied and those coming next in the logical development of the subject) to be done each day before any lateral excursions are made? For instance, ought not there to be specific number, drawing, color, and word lessons, with only association enough to develop them intelligently, before correlation in the larger sense is attempted with the products of such lessons? This seems to us a necessity. If so, there should be set times for such comparatively isolated lines of work and set times for the group work.

12 and 13. The subjects of an elementary course belong to all the years of it, as described above. The only question, then, is the

division of the hours of the day or of the week. This is a matter that can only be determined by intelligent and somewhat extended experimentation. The changing of centers for correlation from time to time is involved.

The work of the elementary schools may, in accordance with what has already been said, be grouped under the following general heads:

(1) Language and literature.
(2) Science, biological and physical.
(3) Mathematics—geometry, arithmetic, and algebra.
(4) History.
(5) Art—music, drawing, modelling, painting, manual training.
(6) Physical exercises and play.

Play is included with physical exercises, as special attention should be given to determining the kinds of play best suited to physical and moral development. Most of the time given to recesses, as at present conducted, is, to say the least, wasted.

Play should and can be made as useful in the physical and moral training as gymnastics, and at the same time be freed from the artificial restraints that tend to diminish spontaneity.

For purposes of experimentation, the following time divisions are suggested, on a basis of twenty-five hours a week:

FIRST AND SECOND YEARS IN SCHOOL.

(1) Language, ten hours per week, including one hour for music. Here music counts as language, but no less as art.
(2) Mathematics, four hours per week. Details omitted.
(3) Science, three and a half hours per week. Details omitted.
(4) Form, three hours per week. This part of art work includes drawing and modeling, correlated with 2.
(5) Physical exercises and play, four and a half hours per week.

YEARS, THREE TO EIGHT INCLUSIVE.

(6) Language, eight hours: English, seven hours for first three years, three hours for last three years. Foreign, four hours for last three years of the course. Music, one hour per week.
(7) Science, six hours per week: Biology (botany, zoölogy, simple physiology and hygiene), physics, geography, and chemistry.
(8) History, two hours per week for six years.
(9) Mathematics, four hours: Arithmetic, first four years, three hours per week. Geometry, beginning with the seventh year, one year two hours per week, and one year one hour per week; correlated with arithmetic, drawing, nature study, and manual training. Algebra, beginning with the seventh year, one year one hour per week, and one year two hours per week; close correlation with arithmetic.
(10) Art—manual training and drawing, two hours a week for six years.
(11) Physical exercises and play, two hours a week for six years.

14. No.

15. Yes. To answer this question in full would require model lessons covering all phases of school work throughout the entire course.

16. In our opinion, the introduction of specialization should be determined by the following considerations:

(1) By the grade of the class. In the first years of school, the instruction consists of a general introduction to the field of knowledge, and the different subjects are naturally brought by the teacher into close relation with one another. Not until the fourth or fifth year of the pupil's school life do the various branches of study diverge into distinct channels. Specialization should not be attempted before this time.

(2) By the nature of the studies. Some branches, such as English, history, and geography, can easily be connected, and can be well taught by any intelligent and capable person of good general education. Others, such as chemistry, physics, and foreign languages, require, if the best results are to be obtained, the services of a specialist. When the latter subjects are introduced, specialization should begin.

(3) By the character of the school. If discipline is hard to maintain, or if the teachers have not been thoroughly trained in any particular branches (and are not willing and competent to acquire such training), the conditions are unfavorable to specialization.

17. The promotion of pupils should depend on their fitness to pursue the studies of the higher grade; it should not be influenced by their age, the clamor of their parents, nor the insufficient accommodations of schoolhouses. The scholars' proficiency should, as a rule, be determined by their daily work rather than by special examinations. The question of promotion and graduation should never be left to school boards elected by popular suffrage; the general principles should be established by the superintendent, and the individual cases should be decided by the principal in consultation with his teachers.

R. H. JESSE, *President of the University of the State of Missouri*, Columbia, Mo.

On the FIRST question my own views are most pronounced. I think the elementary course should be six years, and the secondary course four, making a total of ten years. We are now taking twelve years to do what can be done in ten. The dullest may get through in twelve years, the brightest may get through in nine. But I think that students of average ability and fair industry, with better teaching, and especially with better programmes, can do in ten years what they now are doing in twelve. My own experience is based upon New Orleans and rural Missouri, that is to say, all of Missouri that does not reside in cities of ten thousand and more. My experience, based as I have said, is that two years are lost in the eight-years' district-school course. The children take eight years to do what might be done in six.

As to the THIRD question, I do not think that Latin or a modern language should be taught in the elementary-school course, if it be reduced to six years. If the course is to stay eight years long, I am in favor of enriching the last two years to such an extent as to make them practically high-school work.

But I am sure you would not have sent me the paper if you had thought it was to draw from me in this hot weather a long disquisition. I will stop, but first I must make in the briefest style three remarks.

First, Ethical culture should, in my opinion, receive more emphasis than it now does in elementary schools.

Second, Too much is included in the four-years' course of colleges—I mean our best colleges. The bachelors' degrees should mean rather less than they now do. There should be more graduate work, and it should begin a little earlier.

If I had my time to go over again, I would vote to put more science in the classical course proposed by the Committee of Ten—in fact, I would put science in every year. To get the necessary time, I would omit something—painful as it would be to do so—included in the present course.

I am delighted to see these seventeen questions proposed to the Committee of Fifteen, and I trust that the committee may be guided into all wisdom. The reformation of the elementary schools is even more important, in my opinion, than that of the secondary schools.

L. H. JONES, *Superintendent of Schools*, Cleveland, O.

WHAT CORRELATION OF STUDIES MEANS.

It implies such use of studies together as to secure an advantage not to be had from separate consecutive study of the same subjects.

What are some of the advantages that may thus be obtained?

(1) An unrelated fact cannot exist. To know it as its qualities alone, without knowing its relations, if this were possible, would be to know very little indeed about it. Its most immediately important attributes are often those of relation. After the fact has been known in its essential qualities, the next study is its most important relations; *i. e.*, those which it sustains by virtue of its qualities, or those humanistic relations it bears.

Now, it is impossible, frequently, to find the appropriate fact with which to relate the one just learned, in its own field, and there will never be another time when the tendency of this fact to relate itself properly and permanently to this germane fact will be so strong in the mind of the learner; hence the necessity of going outside the prescribed limits of a particular subject, and correlating the two subjects, in order to establish this important and necessary relationship at the most favorable moment. Some other time will not do so well.

The teacher can in a large measure foresee this kindred and appropriate relationship; therefore it is possible to *prepare* to cor-

relate subjects. Indeed, some subjects by their very nature suggest correlation.

For instance, literature treats of a class of ideas that are internal, difficult to define or describe, but easy to recognize in experience when the proper suggestions are made. A poetical study of nature—*i. e.*, a study of nature as related to human life—assists in suggesting these spiritual ideas, hopes, ideals, etc.; hence the poetical view of nature is the natural correlate of literature.

In the same way the scientific study of nature will be found to be the natural correlate of the study of individual life.

There are numerous other lines of correlation in which effectiveness in instruction is secured through correlation of studies.

(2) Since the ideas are seen more quickly and intensely by the relations of likeness and contrast made possible through this correlation, the memory is made more permanent with less repetition.

(3) The habit of searching for valuable relations is established, broader sympathies in study are developed, and the power of rational apperception is greatly increased.

(4) Non-essentials are effectively eliminated.

(5) There is a generally liberalizing effect on character—an impression of general unity of things, even under diverse appearances, that is of great value.

(6) It develops manliness, tolerance, respect for candid opinion, and a contempt for pretense, depending on what ideas he now possesses which he can bring to bear on the new study.

1. The elementary course of study should be eight and the secondary four, as now.

2. This depends upon what is meant by pedagogical value. Each subject (or at least each group of subjects) has by its nature the capability of producing, through its mastery, a distinctive educational effect in the learner.

The following analysis will make this clear: The effect of learning a thing or of taking a course of training, so far as the mind's condition is changed by such learning or training, is manifested in some of the following respects:

(1) The spiritual development resulting from spiritual sustenance or nutrition, such as is given by social, moral, æsthetic, humanitarian, or religious ideas.

(2) The spiritual development resulting from exercise of the spiritual powers in accordance with laws of spiritual life and growth.

(3) A changed condition with reference to the possession of elementary ideas which may later be used by the mind for combination into more valuable or usable ideas.

(4) A changed condition so that one has more tools in the form of ideas that may act afterward as interpreting ideas (or apperceiving ideas).

(5) A new set of ideals—ideals of life, conduct, achievement, etc.

(6) A new condition as to habits—intellectual, emotional, and practical (or volitional).

Now, it is clear that these subjects, or groups of subjects, differ in their adaptations to produce these effects, some possessing a

higher adaptation to produce one or more of these effects, and others possessing a special adaptation to produce still different ones.

To illustrate, penmanship gives a new tool—a conventional means of communication between human beings, rather than ideas that are spiritually nutritious; while literature, properly mastered, gives ideas and truths so touched with human emotions, and so related to human interests, as to be of real value as nutrition for a human spirit, and to be of real use in the formation of ideals of living, so necessary in the right education of the young.

So history studies the deeds of men in such way as to illumine life and living; while spelling merely makes communication possible in a certain way.

All these subjects may in a way be necessary, but they serve distinctly different pedagogical ends. It would take a very close analysis to distinguish all these differences; and even then the whole truth would not manifest itself, because these subjects are so interrelated that the best effects of two widely differing groups require perfection in the learning of both groups.

Certain slight correlations should be effected among all the studies, much closer ones by groups, and most close between certain allied subjects in the same group.

3. Many subjects enumerated in No. 3 should be taught in the elementary schools. At least one language other than the mother tongue seems desirable for strong pupils.

4. There should be so much attention to logical sequence of topics as the child is able to bear with his particular stage of apperceiving power.

But this should always be controlled by this same power to apperceive. This power to appreciate is composed of two elements: (1) subjective condition of child, by reason of his development—strength, etc.; (2) objective condition, as to the ideas which he possesses, which may become apperceiving ideas for the subjects to be studied.

(1) is somewhat involved, more or less, with the stage of development of the children, and somewhat in the law which controls race development; but (2) is dependent chiefly upon what have been the studies pursued, etc.

5. All are more or less involved. A fuller answer to this is found in introduction above.

6. It is better to correlate by groups.

14. There should be no difference of treatment not authorized by difference of capability or apperceiving power in pupils.

16. The points of specialization of work by teachers should be mainly determined by the point of development of character in the pupils to that degree in which they no longer require the complete, consistent, concrete example of conduct furnished by the one teacher, but can take advantage of the fragmentary suggestions of character and conduct furnished by many teachers in their study and continuous contact, and should be determined only slightly by stages in logical development of subjects.

17. The leading principle on which promotion of pupils from

grade to grade should be made is the ability of the pupils to do the work of the next grade more advantageously than to continue repeating the work of the grade just completed or which is just being done.

This determination should be by the superintendent, who should use all the knowledge the teacher in charge possesses, and supplement this by some appropriate additional test.

L. R. KLEMM, *Bureau of Education*, Washington, D. C.

1. A bifurcation might take place in the elementary course after the sixth year, so as to afford all who intend to enter a secondary school opportunities for beginning the study of foreign languages and mathematics. The other pupils, and probably the majority, could continue their elementary course until it is completed as heretofore. This plan recommends itself for two reasons: (1) It does not hold back talented pupils, and (2) it improves secondary education.

2. Yes, but a detailed answer would lead to the writing of an essay, which would be entirely *de trop* in view of the fact that Dr. Harris has discussed the value of these studies in several papers before the National Educational Association. I only add here, that the first group would be immensely benefited by the introduction of a foreign language, for the mother tongue is never learned well unless opportunity for comparison with another language is offered.

3. Yes, all these subjects might be profitably taught if restricted to the elements or rudiments. Physical culture is acquired by exercise, and a great deal more should be done in this direction, both for the purpose of maintaining and promoting health and gracefulness of movement. Physics and physiology, as well as Latin (or a modern language), should be branches assigned to the seventh and eighth years, and taught only to those who intend to enter the secondary school. This is, however, not to be interpreted as meaning that no allusion to physical phenomena, physiological functions, or references to philological comparison in the study of the mother tongue, should be excluded from the regular eight-years' elementary course.

4. That the sequence of topics should be *naturgemäss*, as well as *culturgemäss*, is an axiom which needs no demonstration; but with reference to the evolutionary steps manifested by the race, I should say that the *child's* race, or nation, is of supreme importance. The term "human race" is too comprehensive (embracing as it does the savages) to consider it.

5. All three purposes are equally important.

6. If the studies of each group mentioned under 2 are properly correlated, the further correlation of the groups to each other will result naturally. Mere allusions, made as chance offers, will suffice. It is at this stage, as it is with the student at a university, he will instinctively feel, and soon consciously know, the near or remote relationship of all knowledge.

7. Relation might be established in a practical way by borrowing

material from one study to aid another, as, for instance, arithmetic from geography, history, and drawing, by reckoning with actual facts, and not with abstract numbers only (or with situations in which the price of a cow is found to be sixty cents, and that of a beefsteak sixty-nine dollars). The same relation may be established between arithmetic and geometry through the medium of mensuration, or between natural history and physiology, or between history and language. Any class teacher who is well versed in the subjects he teaches will establish relations, where the specialist who teaches only one or two branches can see none.

8. As stated before, this correlation need not necessarily be planned, it will naturally result from the teacher's tact and forethought.

9. That depends upon the climate, location, and local circumstances. Ordinarily five or six recitation periods at forty to forty-five minutes per day, five times a week for forty weeks a year, seems ample. In the primary grades the periods may be shorter, say thirty minutes each.

10. In a rudimentary way every branch of study should be treated at once at the beginning of the course; as, for instance, the child who learns that eating unripe fruit is dangerous to the health, or that the heart beats and pumps blood, is learning physiology. A child who gets acquainted with the fact that heat rises, and that it is warmer near the ceiling than near the floor, studies physics. But the regular study should begin in

Language (reading, spelling)	1st year	Penmanship	2d year
Language (grammar and composition)	6th year and 4th "	Manual training	4th "
Arithmetic	1st "	Physical exercises	1st "
Geometry	7th "	Physics	7th "
Algebra	8th "	Physiology	8th "
Geography	3d "	Music (singing)	1st "
History	7th "	Latin (or modern languages)	7th "
Natural history	4th "	Drawing	3d "

11. It is preferable to make the programmes for groups and not for single studies; this enables the teacher to make changes without disturbing the course. An elastic programme is needed.

12. The language group should have one period a day, mathematics four times a week, geography and history four times a week, natural history and science twice a week; penmanship, drawing, and music, as well as manual training, should share the fourth period of each day. This leaves the fifth period for physical exercises, and special lessons for the new studies of the seventh and eighth grades.

13. An answer to this would necessitate much detail work; much depends upon local conditions, especially upon the preparation of the teacher.

14. Only for the pupils of the seventh and eighth grades who intend to enter the secondary school should the methods applied and the matter to be learned be different from the simple elementary course.

15. Not very well. A good teacher would not need it, and a bad teacher would not profit by it.

16. I should be guided by experience, which tells me that the bifurcation may take place profitably after the sixth year of the elementary course.

17. The teachers and the principal of the school have always appeared to me to be the proper persons to grade the pupils. But it is advisable to have the promotion determined by

(1) The teacher who *has* the pupils.

(2) The teacher who *is to get* them.

(3) The principal as the presiding judge.

In cases of disagreement, the assistant superintendent is to decide. An appeal from his decision to the superintendent is admissible.

F. M. McMURRY, *Principal of the Franklin School*, Buffalo, N. Y.

In regard to (*a*) under question 5, I should like to make a few points as follows:

(1) A close correlation of studies will furnish a *motive* in pupils' minds for taking up new topics. *A real motive*, instead of the ordinary state of *indifference*, gives assurance of greater mental activity, better apperception, etc.

(2) It will save much time by making long explanations unnecessary; as, for instance, when the reading introduces "Paul Revere's Ride," after the history has handled the battle of Lexington.

(3) By ruling out irrelevant ideas it leads to the omission of non-essentials, for the irrelevant notions are the non-essentials; for example, brokerage, cube root, first three French and Indian wars, etc.

(4) It furnishes abundant opportunity for *incidental* reviews, which are by far the best kind of reviews. Ordinarily the mind is at no tension during reviews, the *memory*, and not the *judgment*, being appealed to. But proper correlation furnishes occasions continually for making *use* of what has already been learned, thus giving a *motive to the child* for reviews. Also, the old points are usually reviewed from a somewhat new standpoint when recalled by other studies; thus not only the interest, but also the *thoroughness of the knowledge*, is increased.

ALMON G. MERWIN, *Principal of Grammar School No. 74*, Brooklyn, N. Y.

1. If the purpose of elementary schools is to do the most that can be done for the pupil who does not go to college—that is, for the vast majority—I think it better to make the course, as it is now, eight years and four years; otherwise the pupil will leave the elementary school at the end of six years, and not enter the high school at all.

2. The study of language as a means of expression better prepares a pupil to influence others; the study of language for its

content gives ability in knowing the thought of other minds; the study of language for itself, its origin, its mechanics, has little value, unless combined with its study for thought and expression. When language is studied for the thought, it cultivates the judgment, because it is never exact—except mathematical language—always approximate. The very words, "large," "small;" "near," "far;" "many," "few;" "good," "bad"—tell us this. In consequence of this uncertainty the mind is obliged to judge upon probabilities. Judging upon probabilities is what we are doing nearly all of the time in practical life. This study of the content of language I believe to be of the very highest practical and pedagogical value.

No one doubts the value of language as a means of expression. Concise and clear expression reacts upon the speaker's mind, or rather, perhaps, the effort at clear expression brings the thought into stronger relief in order to clear mental vision, which alone makes clear expression possible. Great fluency does, indeed, frequently exist with very little thought; language becomes the rattle of lumbering emptiness, not the hum of conscious thought.

Mathematics is that form of language which deals with measured or measurable existences. Verbal language approximates only; mathematical language is exact or more nearly exact. If mathematics has any special value, it lies in this, that it trains the mind to exactness, and further, that it gives the mind the power to abstract and compare relations, or elements, common to many different things. Its duty is to measure relations. In verbal language we say, *A* is heavier than *B*; in mathematical language we say, If *A* is 1 in weight, *B* is 3 in the same attribute.

That language is indispensable to thought, speaking generally, we must believe; yet much of the best thinking is done without language. The inventor thinks in terms of the parts of his imaginary machine, and it requires an expert to put the machine into verbal language.

This brings out a pedagogical value as well, I suspect, as a chief practical value of language. It is a record by which a thought once in the mind is caught and recorded or labeled for further observation when the mind has leisure. I am of the opinion that but for the discovery or invention of language the human race could never have emerged from brutehood.

Geography answers that natural or inherited demand of the mind, Where? Its special value—pedagogical value—is that it cultivates the imagination. We know from observation but little of the world. We see a little, and by use of the imagination construct the rest.

History leans somewhat upon geography; indeed, history has been made possible by geographical conditions. It exhibits men in the trend of events; it forces upon the mind important generalizations, and habituates it to the recognition of law in all human affairs. Under right mental conditions it leads to the highest generalizations. Too often in elementary schools it is a mere patchwork of events.

Natural sciences, as studied in elementary schools, do very little pedagogically for the mind.

These studies may or may not cultivate habits of observation. Science involves generalizations that belong to a stage of development later than the primary schools. Minute and prolonged observation, unless accompanied by high powers of generalization, tends to narrow the mind. Wide generalizations are usually suggested by a few facts; a theory is formed, then comes verification of the theory by a multitude of observations. This is the work of well-developed minds. The facts of natural science, like other facts, are of more or less value to children. I apprehend that their pedagogical value to children does not differ widely from the value of many other facts common to every-day life.

Drawing creates habits of close attention and care. Its general pedagogical effect upon the mind is good. Its value in enabling children to see things as they are is, I think, much overestimated. Drawing is the representation of appearances, not of things as they are. It is the work of time to make a child ignore the real form and draw the appearance as projected on a plane surface. I can conceive that in many cases drawing may retard, rather than aid, real investigation. We record things by drawing, not discover them. As a record and as a form of language, drawing is of the very highest utility. In accuracy of expression, drawing is also superior to verbal language.

3. With one or two exceptions, in a six-year course, I say emphatically *no*. In an eight-year course no language but English, but English more thoroughly.

Educators seem to deny, by their acts, that the school is for a special purpose. They assume that, whatever the child is to be, he is to be made in school. They ignore the Church, the home, and that all-important education that comes from the child's association among his fellows, and his experience in the outside world. I believe it most fortunate for humanity that there are phases of education that the schools cannot control.

I might say, too, that the school tends to prevent a spontaneous activity. This is a necessity. The school is directed activity. Yet we are not to forget that, as nearly as possible, we are to secure directed spontaneity. At best, this can be but imperfectly done. There are the studies blocked out, and there is the time. Each one of fifty in a class must get practically the same quantity, the same quality, and in the same time. A future examination demands a memoriter drill, which leaves little time for mental activity in other directions. This memoriter drill tends to repress spontaneity. Incidents may, to some small degree, excite spontaneous activity. Besides, it is the very nature and purpose of a school to direct activity. The problem is to direct spontaneous activity. This problem has not yet been solved. Incidental instruction or learning cannot take the place of specific instruction. If it could, schools would be unnecessary.

Therefore, among all the things it is well for a child to know, we must select a few, the most important. To place too much in a course of study is like trying to train the muscles of a ten-year-old boy to lift as much as a man—just as stupid, just as impossible.

4. Undoubtedly by the child's power to apperceive new ideas, which, I take it, means his power to understand things. The child must be approached on the side of his experience. One child knows mountains and plains; another, rivers and lakes; a third, cities and towns.

No child in school can receive the new unless there is in his mind a structure of knowledge to which he can attach it—into which he can build his new ideas, a category under which the new will fall. This structure, or this category, is more or less modified by the new, while the new is labeled as this or that by the structure into which it is built, or the category under which it falls. It is probable that every mind sees a new subject from a standpoint a little different from that of every other mind. This comes from the fact that no two minds have just the same experience. It also suggests the inherent difficulty to be met in our schools. We are obliged to start a thousand children in just the same way, regardless of their differing experiences.

I should not consider for one moment "the evolutionary steps manifested by the race"—by any race.

Man may have existed a million years, more or less. What we know of the race, at the most, is the history of a few thousand years—too short a period to determine man's character during the process of evolution. In truth, what we really know of the evolution of prehistoric man is practically zero. What some pretend to know is really a result of reasoning backward, assuming as a premise the very point to be proved, and this is the way it is done: The child is developed thus before our eyes, therefore the race must have been developed thus a hundred thousand years ago. It is assumed that the individual development is a type of race development; then we reason backward to determine how the race was developed—a very unsatisfactory way of reasoning. But, even admitting the assumption, the whole matter is too vague and too involved to make such possible process of evolution a practical guide. If the every-day observation of the processes of education, and the study of the child every day with us, do not help us to a knowledge of educational principles, I think it will be quite in vain to seek those principles in the study of prehistoric man. It is true, we know there were cave-dwellers somewhere in the past, who with clubs fought wild beasts, broke their bones, and sucked out the marrow; we also know there are now savages that take scalps, hunt heads, roast and eat their enemies, and live in caves or under bent trees. If we are to follow the development of the race, these conditions are very suggestive. I am fully of the opinion that we had better study for the principles of education among things around us, instead of trying to find them in the Trenton gravels, or among the cave-dwellers, or lake-dwellers of southern Europe.

As to the studies that should be taught in school, I am unalterably fixed in the opinion that those studies should be placed before the child that will be of most value to him in a later probable environment. Such studies will give him the best discipline, for they will habituate him, physically, mentally, and morally, to that line of

activity which meets the demands, the necessities, of his coming life.

5. I should in a measure say no to (*a*), (*b*), and (*c*). There must be some duplication, just as there must be duplication in splicing a rope Indeed, apperception is little else than a splicing, a correlation, an interaction, a unifying of the old and the new. I think the point is deeper than correlation, it is really a question of the unification of knowledge. It is finding some common characteristics of knowledge, so that all knowing may be made one. Correlation is the process toward unification, a process seldom adopted by developed minds, probably the highest process of which the intellect is capable. By this correlation and perception of common properties or factors have been made all, or nearly all, the discoveries that have created science and extended the bounds of knowledge. But it is a late process, and should be used with great care in elementary schools. I do not see how correlation will eliminate non-essentials.

11. Time should be assigned for each subject, this beyond any shadow of doubt. The contrary opinion has been in part responsible for overloading our courses of study for elementary schools. It has seemed to be assumed that by using the term "mathematics" to include arithmetic, algebra, and geometry, the study of these subjects has been simplified—a most fallacious assumption. I wish to express the opinion with more force than I can express it, that every subject and every material point in every subject taught must at some time be made a specialty in elementary schools. No correlation can take the place of special work. It appears to me a mad fallacy that the implements of learning, reading, penmanship, drawing, in short, *expression*, are mere incident, to be learned incidentally in the study of nature. I concede that, having gained a fair knowledge of the implements, there comes a large increase of skill in their use. Must a man never learn to load a gun until he sees the game? or shall he never study an engine until he is to drive an express train?

Besides, the implements of knowledge are as real, as much subjects of thought, as nature itself; indeed, in any wide view the implements of knowledge are a part of nature, as man is a part of nature. Words, numbers, pictures, actions, are as real things as trees, flowers, or rocks; and as such they are subjects of special study. To my mind, the very purpose, end, and aim of the school is to do special work in preparation of the individual for probable conditions he is to meet in future life; hence education in school, especially in an elementary school, must deal largely with the tools of knowledge, as well as with the knowledge to gain which these tools are used. Therefore, I conclude, there is no gain in calling geography, botany, zoölogy, mineralogy, physics, and physiology "nature studies" or "elementary science," or in correlating them as such; the mind will not be so cheated into knowledge. I must believe that mere theorists, men who have never tried their own theories, who have quite false views of the purpose of a school, are the men who have instigated this most mischievous folly.

13. This means the basis of a course of study. Whatever we may determine will be a matter of opinion, and will be changed with changing conditions. The probability is that no one really knows what are the topics that it would be best to introduce into our schools. I may say, give time to do well what is undertaken. Take those topics that will be of use to the pupil in later life. Never study anything for its disciplinary effects only. Discipline, like character, is lost by seeking. Study thoroughly what will be most useful, and that study will inevitably give the best discipline.

14. I think it wise to make some difference, especially in the studies of those who expect to take a course in college or in some technical school. Some of the more intricate facts of elementary studies may be omitted. These problems of the elementary school will be mastered with little time and effort in the high school. With such pupils a saving of time might be made by waiting until the mind has grown. With many subjects special effort must be made, for practical reasons, to impress upon the minds of children who leave school early what they would easily grasp if we could wait for them.

17. I know no other principle than that the work of the grade shall be fairly completed. There may be some exceptions to a rule based upon this principle. It may happen from some peculiarity that the child fails in one study; in this case he should not be detained, but sent forward to get what he can. It sometimes happens that a promotion will awaken in a lazy or discouraged child renewed activity; then promotion should be tried. Sometimes promotion acts like a change of diet, creating a new appetite for work or knowledge; then try it. Capable children should have the opportunity of doing their work in less time and be promoted accordingly.

In clear cases, which should include sixty or seventy per cent. of the class, the teacher should make the determination. Where there is doubt, an oral or written examination by the principal, together with the judgment of the teacher, should determine.

WILLIAM A. MOWRY, Hyde Park, Mass.

1. This question involves some very important considerations, and should be answered with care. It is well known that but a small percentage of the pupils who finish the grammar-school (or elementary) course of study go on to the high-school (or secondary) course. If the elementary course nominally ended two years earlier, it is apparently certain that a large number of those who now manage to complete the eight or nine years' course would end their school-days with the completion of the elementary course at the end of the six years, thereby losing two valuable years of important school work. Such a result would prove inevitably a serious loss to the country.

But it is claimed that much valuable time may be gained by beginning the high school (or secondary) work earlier. There are two sides to this question. If this secondary work is introduced

too early, it must be with great loss of thoroughness and accuracy in the elementary studies, which are quite as important as the studies thus introduced. If, on the other hand, it is shown to be desirable, as doubtless it may be, to introduce elementary algebra, geometry, and more nature study in the later years of the elementary course, it surely is not necessary to transfer the pupils from the ordinary routine of grammar-school work to the different conditions of the high school in order to accomplish this simple purpose. These studies can easily be correlated with arithmetic and nature study already in the elementary curriculum, while the groundwork in the entire course of elementary studies is being done with that thoroughness and care which are so important to prepare the youthful minds for closer study and more self-reliant work in the higher grade.

Another point presents itself just here. The question assumes that the "elementary" course is "at present" *eight* years. This is true in some parts of the country. In other sections, where the schools are equally good and results attained equally satisfactory, the course is *nine* years.

I apprehend that the difference is mainly this: Where the course is laid down for *nine* years, many pupils will be promoted more rapidly, and so will complete the course in eight, seven, six, and possibly, in rare instances, in five years. On the other hand, where the course is laid down for *eight* years, some, perhaps many, dull pupils will be unable to keep pace, and hence, not being "promoted," will drop back and take nine years. For myself, judging from a large experience and a wide observation at the East and at the West, I incline to the nine-years' course rather than the eight-years'. But it should be the constant aim of the teachers to push the bright ones along faster. It is better to promote quick pupils faster than is laid down, than to drop back the dull ones for a longer course.

By reference to the paper by Dr. Huling, of Cambridge, it will be seen that he prefers nine years for the elementary and four for the secondary course.

Dr. Frank A. Hill, secretary of the Massachusetts Board of Education, writes me: "I incline to an elementary course of nine years. While theoretically there should be no break between the grammar and the high, still, under Massachusetts conditions, there is such a break; that is, large numbers of pupils incline to close their public-school course at the end of the grammar-school course, and this is a pretty strong argument for keeping that course a prolonged one, as at present. I believe it feasible to shorten this course for the brighter pupils who wish to enter the high school earlier, as is done in the city of Cambridge. I believe, further, that it is possible, through the so-called 'enrichment' of the grammar-school course, to make the secondary course dip down into the grammar school in such a way as practically to extend its length."

2. Doubtless each of these studies has a distinct pedagogical value Much may be said to show how each of them operates to *unfold* and develop the child's mind, but it is evidently too early *yet in* our study of child-mind to weigh and measure with accuracy

these several branches, and draw the conclusion that one gives two pounds of discipline while another gives but one pound, or that one furnishes an expansive power of two meters, while the influence of the others is only to the extent of one meter.

Just here, however, as bearing on this question rather than any of the others, I beg to introduce some valuable suggestions from one of the most careful, reliable, and successful educators of New England. He says :

"It seems to me there are *six* lines of work that grow out of the child's twofold environment of nature and man. Each line has its own *logical* development from *natural* approaches. These six are in many cases closely related at certain points, and that relation should be most plainly shown.

"(1) Physical development.
"(2) Mathematical exactness—numbers.
"(3) Scientific phenomena—science.
"(4) Geography.
"(5) History.
"(6) Literature.

"I cannot see how any one of these can be so absorbed in the others as to disappear from the programme. Each has its own line of development. They touch each other at a great many points, and illumine each other at those points.

"Aside from these is the whole matter of *expression*, which may be taught by *specific drill* along with each line above, as the means of expression peculiar to the given line. It seems wiser to associate the drill in expression with each line rather than to have an isolated drill out of connection. We find most of our failures in expression due to this isolation and consequent lack of appreciation at the right time.

"It is not necessary that each line come in the programme each day, but it will give the teacher time enough on each line to consider it thoroughly, to show its relation to the other allied lines, and to drill on the different modes of expression. This is especially true in the grammar grades. In this the reading, writing, spelling, language, drawing, etc., will come in their connection, and receive much more drill than they can get otherwise. If from time to time special exercises in any form are needed, they can be taken more understandingly.

"There are two correlations required—one of the 'content' subjects—*e. g.*, relation of geography to history, not trying to teach one from the other which is abnormal; the other of the expression to the subject to be expressed—*e. g* , spelling to geography, to history, to literature, etc., a language exercise to history, etc., drawing to science, etc.

"The disconnected teaching of the 'content' subjects, and especially the separation of the expression and content subjects, must be overcome by some arrangement whereby the teacher is to have *time* to do this correlating."

3. Manual training—at least so far as sloyd, sewing, and cooking—should be taught in the upper grades only of the eight or nine years in the elementary school curriculum. Physics, to some extent,

should be taught, especially in the higher grades. Music should find a place in *all* the grades, for reasons too well known to be repeated here. Physiology (including the effects of stimulants and narcotics) should be taught in all grades. This subject, too, has been so fully discussed as to need no argument here. Moreover, it is by law made mandatory in nearly all the States. Latin or a modern language *may* be taught to an elective class in the higher grades of the grammar-school course. This would be in the interest of those who propose to go on to the high school.

9. The general tendency is to make the recitation periods too long in all grades of elementary schools. In one of the best grammar schools in Boston, I was surprised lately to find, in grades from six to nine, periods for a single recitation from fifty minutes to an hour and a quarter.

In my judgment—and this opinion is ratified by some of the best educational minds in the country—in the primary grades the attention of the children should not be held to one subject for more than twenty minutes, and in the grammar grades for not more than from thirty to forty minutes, the latter time applying only to pupils in the eighth and ninth grades.

17. Promotion should not be determined by special examinations or by a series of examinations. The important question to be asked is—not is he an excellent scholar, but is he qualified to appreciate and profit by the studies of the next grade higher. The main point to be decided is what the best interests of this individual pupil demand. Can he pursue the studies of the next grade to advantage? If so, he should be advanced. This should be determined primarily by the opinion of the individual teacher, subject to revision by the principal, and the approval of the supervisor.

COLONEL FRANCIS W. PARKER, *Principal of the Cook County Normal School*, Englewood, Ill.

1. To my mind, it makes no difference in regard to the division in time, whether there should be eight years and four years, or six and six years. The work should be organically related from the kindergarten, including secondary education. In other words, there should be no break in the work; a pupil should go from the eighth grade to the high school, and continue that work which he has already begun.

2. In a general answer, I should say that no subject in itself has a distinct pedagogical value. The value of any subject is in relation to all other subjects.

3. This seems to be a very much mixed-up question. I should certainly have manual training in all grades of school, from the kindergarten to the university. I should also have physical culture and music. Science should be taught from the first grade on through all grades. I am not prepared to say whether Latin should be taught in the grammar grades or not. At present, I do not think it advisable to introduce Latin until the work in our schools is more pedagogical than now.

4. Sequence of topics should always be adapted to the powers of the child. The development of the child should follow the general development of the race, minus obstructions. I do not understand the last question in No. 4.

5. All education is to develop character, and character is intrinsically ethical.

6, 7, 8. It is possible to unite and correlate all the studies of the elementary school.

9. The power of attention on the part of a class should determine the length of a recitation.

10. All subjects of study should be introduced into the primary grades and continued throughout the eight years.

11. Cannot answer this question, as experience in the subject of concentration is now altogether too limited to make special divisions of time.

12 and 13. Same answer.

14. All pupils should be *educated*, whether they stay in school a week or fifteen years. All pupils should have the same subjects.

15. The best method is not yet known.

16. There should be no special departmental work in the eight-years' course, and very little in the high-school course.

17. Ability to work. The teacher should determine.

JOHN T. PRINCE, *Agent of the State Board of Education*, Boston, Mass.

3. A widely extended curriculum seems to me desirable for the elementary schools, so as to cultivate a "many-sided interest" and to assist in a harmonious development of the mental powers. But to avoid superficialness, it is important that a careful selection of topics be made (principal types being emphasized) and that a correlation of topics and subjects be made. This correlation should be made in groups arranged and taught according to natural relations. An attempt to correlate all subjects leads to a forced and unnatural association and consequent loss of mental energy.

7. The groups of subjects (not counting music, manual training, and physical culture) are:

I. (1) Nature study, including the elements of physical geography, botany, zoölogy, mineralogy, physics, and physiology; (2) mathematics, including arithmetic, inventional geometry, and the elements of algebra.

II. (1) Descriptive geography; (2) history; (3) civil government.

III. Language, including drawing, reading, spelling, penmanship, grammar, elements of logic and rhetoric, composition, and one foreign language.

Correlation of subjects within each group should be as complete as possible, and the correlation of drawing, reading, and composition with all other subjects should also be close and continuous.

Specialization by departmental instruction may be made accord-

ing to the correlated groups, a special teacher being given a group of subjects in each of several grades.

Thus, with teachers trained for their profession, there would be in my opinion a wise treatment of three subjects of pedagogy now attracting much attention ; viz.,

Extension of the curriculum, departmental instruction, and correlation of studies.

J. W. STEARNS, *Professor of Pedagogy*,
University of Wisconsin, Madison, Wis.

1. To the schools of large cities the question is unimportant, but to smaller places the present division is most advantageous, as it permits a difference of management with pupils above fourteen, who ought to be separated from those younger in order to permit this.

3. Manual training for the muscular correlation and support of intellectual training in realities ; music and art for emotional refinement ; physics, because high-school science cannot be mastered as it should be without elementary training of this sort. I do not believe the mind mature enough to profit by classical training as now pursued until high-school age. A modern language by a so-called "natural method" might be useful.

17. The real interests of the individual pupil. These must be determined by (1) opinion of teachers, (2) written tests. The tests should be prepared by teachers, and revised by superintendent, but can be satisfactory only when approved by both.

S. G. WILLIAMS, *Professor of Pedagogy*,
Cornell University, Ithaca, N. Y.

[On behalf of a committee consisting of the superintendent of the schools of Ithaca, N. Y., the principal of the high school, and two teachers in elementary schools.]

1. With regard to the first question we would recommend that the elementary course should *at first* be seven years and the high school five ; but four of us are of the opinion that where any language other than the vernacular is to be undertaken it is desirable that it should be begun as early as the twelfth year of age.

9. The committee as a whole would recommend that the length of recitation periods should be fifteen minutes for the first school year, twenty minutes for the second, twenty-five minutes for the third and fourth years, thirty minutes for the fifth and sixth years, and forty minutes for any added years ; for the reason that the continuance of active interest in the young requires frequent change of impression, whilst as age advances such changes need be less frequent.

Personally, I would say that I observed in German schools that the *instruction* periods were of the same length for children of six years as for those of fourteen, and that, too, without apparent

flagging of attention. I thought this sustained attention was due to the frequent change in the nature of the operations within the hour, questioning alternately with oral instruction, with slate and blackboard work, with gymnastic movements, and with singing. Might it not be profitable so to modify much of the work in elementary schools as to have more *instruction* and less recitation of lessons, prepared too often without right ideas how to study? In this way the work of the pupils would be wholly guided and inspired by the teacher during all the hours of school, thus making unnecessary the so-called *busy work*, which too often is mere trifling, habituating children to *saunter*.

11. Time should be assigned only for the groups named in No. 7.

14. After some comparison of views, the committee unanimously agreed that the instruction of all pupils should be the same, whatever their supposed destination.

16. The question of specialization of teaching in the elementary schools was felt to present much difficulty. If the only idea is to gain the greatest amount of knowledge in a given time, possibly the highly trained specialist would be most effective; but if the shaping of character and the formation of good habits is made the chief aim, the steady influence of a high-toned teacher would seem to be very important, at least for the very plastic period from six to ten years of age.

17. The committee were unanimously of the opinion that the principle on which promotions should be made should be competency to do the work of the next higher grade satisfactorily. As to the manner in which this competency should be determined, the favorite opinion seemed to be that it should be by examinations conducted by the teachers into whose grades pupils aspire to enter.

The chairman of the committee, however, was inclined to favor a plan outlined in Circular No. 7, 1891, of the Bureau of Education.

APPENDIX III

OPINIONS SUBMITTED TO THE SUB-COMMITTEE ON THE ORGANIZATION OF CITY SCHOOL SYSTEMS

The following are the questions in answer to which the opinions were written:

1. Should there be a board of education, or a commissioner with an advisory council?

2. If a commissioner, should he be elected by the people, or appointed by the mayor, or selected in some other way?

3. What should be his powers and duties?

4. If a board of education, of how many members should it consist?

5. Should the members be elected, or appointed? From the city at large, or to represent districts?

6. Should the members be elected in equal numbers from the two great political parties, or can any other device be suggested to eliminate politics from school administration?

7. By what authority should the superintendent of schools be elected or appointed, and for what term?

8. What should be the qualifications of a city superintendent of schools?

9. Should the city superintendent owe his appointment directly or indirectly to the State educational authorities and be responsible to them rather than to the local authorities?

10. In whom should be vested the authority to license teachers? To cancel licenses for cause?

11. In whom should be vested the power to appoint teachers? In whom the power to discharge teachers?

12. Supposing teachers appointed to a school, who should have the power to assign them to grades or classes?

13. Should the principle of competitive examination be introduced in determining promotions to positions of greater responsibility or emolument?

14. How should the duties of superintendents on the one hand and of principals on the other in the supervision of methods and of teaching be defined?

15. By whom should the course of study be made?

16. By whom should text-books be selected?

17. By whom should promotions be made?

18. By whom should disputes between parents and the teaching force be settled?

19. By whom should a compulsory education law be enforced?

C. W. BARDEEN, *Editor of the "School Bulletin,"*
Syracuse, N. Y.

1. I should prefer a board of education.

2. If a commissioner, he should unquestionably be appointed.

3. I do not see in what respect the Cleveland plan could be improved.

4. Not to exceed seven.

5. Most emphatically appointed, and most, *most* emphatically from the city at large. The representative system is pernicious.

6. There is no board so partisan as a non-partisan board, and it has been a failure wherever tried, especially in Albany and Oswego. The only way to eliminate politics is to appoint the best men, regardless of politics.

7. The superintendent should be appointed by the board of education, and the appointment should be permanent, or at least for a period of not less than five years.

8. He should be a teacher of experience, but not of too long experience, as that is apt to narrow. He should be a man of broad and recognized common sense, a man among men, with nothing of the pedagogue about him, but in bearing and attire and manner able to meet bankers and lawyers and other prominent men as a recognized equal. He should be a man of enthusiasm and earnestness, seeking a place because he wants to make the schools better, and recognizing the office as his great opportunity and life-work. He should be a gentleman, able to control without austerity or harshness, with genuine native sympathy for both pupils and teachers. There are many other qualifications, but if they were all enumerated his wings would sprout and he would fly. These are the most essential.

9. I question whether the State educational authorities can judge of the needs of a locality so well as the local authorities. I should prefer appointment of the superintendent by a board of education appointed by the mayor.

10. The authority to license and to appoint teachers should never be vested in the same person. The superintendent should have one or the other, and I think it is better he should have the appointment; so I see no way to improve upon the uniform system of examinations of the State of New York, which should be binding upon every city as well as every country district.

11. Both should be vested absolutely in the superintendent.

12. The principal, subject to the approval of the superintendent.

13. Never. A competitive examination has no place in teaching. The qualifications of a teacher can never be estimated by an examination. Examinations may determine who is unfit to teach, but not who is more fit to teach than another, or where one is best fitted to teach.

14. The superintendents should lay down general principles of teaching and outlines of methods, and require a certain amount of progress in every school. Beyond this, considerable latitude should

be left to the principals, and individuality encouraged, so far as it does not interfere with the general plan of education in the city.

15. The final authority should be vested in the superintendent. He will, naturally, be assisted by the principal.

16. By the superintendent.

17. By the superintendent, with reference to the board of education only where he is in doubt or desires their moral support.

19. By the school officers exclusively, without reference to the police. It seemed to me that Mr. Seaver's arguments on this point, at Richmond, were unanswerable.

EARL BARNES, *Professor of Education*,
Leland Stanford, Jr., University, Palo Alto, Cal.

1. I believe that a commissioner with an advisory council is superior to a board of education. Centralized authority leads to prompt and definite action, and enables the people to locate bad management.

2. I do not think the commissioner should be elected by the people, as this necessarily confines the selection to local candidates. Neither should I like him to be appointed by the mayor. I should prefer that he be appointed by the advisory council or by the common council of the city.

3. It seems to me his powers and duties should consist in a general oversight of the educational interests of the city, the selection of the superintendent of schools, and a general control of the business side of the school department.

7. The superintendent of schools should be appointed by the school commissioner rather than by the mayor. I should rather have him appointed by a board of education than to have him elected.

8. In the first place, he should be a well man with a good physique and a strong personality, capable of easily influencing women and children. In the second place, he should be thoroughly versed in the best pedagogic thought of his day. Of course there are many other things desirable, such as business capacity, general knowledge of economic conditions, and so on and so on.

9. I think the city superintendent should be responsible to the local authorities.

10. The authority to license teachers I should place in the hands of a considerable board, not too local nor too general. A State board with a uniform examination can hardly meet the requirements of backward and advanced communities within its borders. In large cities I would have a special board of examiners, and in smaller cities I should trust to the county board examiners. I would give the superintendent power to cancel licenses for cause.

11. I would give the superintendent power to appoint and dismiss teachers.

12. It seems to me there can be no question that the superintendent should have the power to assign teachers to their grades or classes.

13. A competitive examination on the basis of academic knowledge does not seem to me a desirable method for determining promotions. If a competitive examination could be held which would cover academic knowledge, professional training, and actual ability to do, then I should say it would be a good thing.

14. The superintendent should have a large supervision over methods and over teaching, but he should be generous and liberal enough to leave all principals great freedom in working out their own problems. It seems to me he ought never to impose a rule of method upon his schools.

15. The course of study should be made by the principals and the superintendent, the superintendent having first called the teachers into counsel on the matter.

17. Promotions should be made on the judgment of the grade teachers, subject to the veto of the principal.

18. Disputes between parents and the teaching force should be settled by the teacher immediately concerned, with the right of appeal to the principal, and beyond him to the superintendent.

NICHOLAS MURRAY BUTLER, *Professor of Philosophy and Education*, Columbia College, New York.

There should be a board of education or school commission appointed by the mayor, without confirmation by the common council or any other body. This board should not be large. A board of ten or twelve members is large enough to administer the school system of the city of New York. The members should be appointed from the city at large, without any regard to wards or electoral districts. They should serve for a considerable term, say five years, and not more than two members should go out of office in any one year. Under an ideal plan the members of the school board should be appointed without regard to their political views, but solely because of their fitness for the office; but, in the present state of municipal administration in America, this is impossible. I therefore favor limiting the choice of the mayor by a provision to the effect that not more than one-half of the members of the board shall belong to one and the same political party.

This board should stand in the same relation to the school system that boards of trustees do to colleges and universities; that is, they should be the ultimate source of power, and should represent the public policy in relation to school matters. They should make all appropriations, audit all bills, and make all of the major appointments. Under the latter phrase I include the superintendent, the assistant superintendents or supervisors, and the principals of schools.

All action taken by any of these executive officers should have the full authority of the board, but this authority should be delegated by a by-law or rule, and not be called for in every matter of detail.

The city superintendent of schools should be appointed by the school board to serve during good behavior and satisfactory incum-

bency. Despite the fact that there have been in our experience admirable superintendents who came to the position without special education and training, I believe that there is a danger here that the country cannot afford to run as part of its permanent administrative policy. I therefore favor a provision that would limit the selection of city superintendents to men who have had either a college education or a previous successful career in teaching and supervision. The city superintendent should owe his appointment to the local board and act as its executive officer. Indirectly, of course, he owes his election to the State, because under our system of government that is the final authority in matters of educational organization and administration.

A board (corresponding to the faculty of a college or university) made up of the superintendent and the assistant superintendents or supervisors should license, appoint, cancel licenses for cause, and discharge all teachers. The appointments should be made from a list prepared after an examination set by this board, and I see no objection to making appointments from this list in order of merit as determined by that examination. It should, however, be borne in mind, that, with the increasing specialization and division of labor that is going on in our city school systems, persons of various and varied qualifications are needed in the schools. There should, therefore, be vested in this board full power to appoint to a given post the person that they deem best fitted to fill the post, whether or not that person be at the head of the competitive list. After teachers have been appointed to a school the principal should have full authority to assign them to grades or classes. In case of alleged injustice or dissatisfaction, there should be the right of appeal to the superintendent.

Your thirteenth question I have partially answered above. It is very necessary, in selecting persons for promotion by competitive examination, to bear in mind the well-demonstrated fact that success in one position is not necessarily an assurance of capability to fill another and higher position. It is possible, however, by keeping careful records of work done, to discover who among the persons holding subordinate posts possess the necessary intelligence and directive power to fill satisfactorily higher and more responsible positions. If this element in the case be kept clearly in mind, then I am in favor of competitive examinations for promotion. I commend to your committee the consideration, with reference to this point, of the system devised for the Department of the Interior at Washington by the present Commissioner of Education.

The board above referred to (not the school board) should make the course of study and select the text-books that may be used in the schools.

Promotions should be made by the principal of each school.

Disputes between parents and the teaching force should be settled by the superintendent.

The compulsory education law should be enforced by an officer of the school board especially appointed for the purpose, and subject to the jurisdiction of the superintendent.

Permit me to add some important recommendations that lie outside of the questions you have submitted to me.

One of these relates to financial matters. It is easy enough to ascertain from the experience of a given community what percentage or proportion of the average assessed value of the property of that community is necessary in order to sustain a school system. This percentage or proportion having been determined upon, it should be placed at the disposal of the school board by law and without the intervention of a common council or any other board. In this way the resources of the school board will expand naturally as the city increases in wealth and population, and many of the difficulties that school boards now labor under will be removed. The money received from this source should be devoted to what I call current expenses. All money needed for permanent account, such as the acquisition of land and the erection of school buildings, should be raised in addition to the above sum by the issue of bonds. The mode in which bonds may be issued is well understood throughout the United States, and the practice, while varied in detail, is uniform in principle.

A second suggestion I deem of great importance, and I base it upon the success of the French people in securing counsel and assistance in the management of the schools from the teaching force itself. All teachers who have passed the probationary period, and are serving on a permanent appointment, should be *ex officio* members of a teachers' council, which should meet regularly for the discussion of questions relating to text-books, courses of study, methods of teaching, and so on. This council should be given the legal right to memorialize the board of superintendents or supervisors, and should elect a certain number of representatives to sit in that board. I need not enlarge on the great advantages that will follow from giving the teachers an indirect voice in the matters that directly concern them. Such a policy promotes the solidarity of the school system, and tends to harmony and order as well as to increase the efficiency of the teaching force.

Still another suggestion is, that in very large cities the care of school buildings and the purchase of supplies should devolve upon a salaried officer appointed by the school board for that purpose. In smaller cities the duties of such an officer can easily be devolved upon the secretary of the school board. An architect for the planning and erection of school buildings will naturally be a third permanent executive officer in the largest cities, where school buildings are always in process of erection. In smaller cities this will not be necessary, and as buildings are needed architects can be specially employed to prepare the plans and to supervise the construction.

J. M. CARLISLE, *State Superintendent of Public Instruction*, Austin, Tex.

1. There should be both a board of education and a commissioner with advisory council.

2. The commissioner should be elected by the people.

3. His powers and duties should be to preside at meetings of the board of education and at meetings of his council, to superintend buildings and grounds, to appoint committees of the board of education, to approve or veto the orders, rules, resolutions, and acts of the board of education, to make estimates of expenditure, submit recommendations to the board of education, and to exercise generally the same function in reference to the board of education and school matters that the mayor exercises in reference to the city council and the interest of the city other than school officers.

4. The board of education should consist of not less than five and not more than fifteen members.

5. The members should be elected from the city at large.

6. The State superintendent, county superintendent, trustees of county districts, members of city boards of education, should all be elected on the same day throughout the State, at a time when no other officers, except judicial officers, are elected.

7. The city superintendent should be elected by the advisory council of the commissioner. He should first be elected for a term of three years, and to continue thereafter, during good behavior, without re-election.

8. The superintendent should be a man of unquestioned and superior scholarship, extensive professional training, administrative ability, approachability, and *good sense.*

9. City superintendent should be required to hold a license from the State superintendent.

10. The city superintendent should appoint the city board of examiners. This board should examine teachers and report to the superintendent, who should issue licenses. The superintendent should be authorized to cancel licenses for cause.

11. The board of education should elect teachers from a restricted list prepared by the superintendent. Teachers should be dismissed for cause by the board.

12. The principals should be assigned by the superintendent, or elected to specific principalships by the board. The superintendent should then assign a sufficient number of teachers to each school, and the principal should assign them to their respective grades, subject to the approval of the superintendent.

13. The principle of competitive examinations being essentially unsound has no place in school administration.

14. The duties of superintendent, principals, and teachers, should be defined by the board of education.

15. The course of study should be made by the superintendent, subject to the approval of the board of education.

16. Text-books should be adopted by the board of education.

17. Promotion should be made by the teacher, subject to the approval of the principal and the superintendent.

18. Disputes between a parent and a teacher should be decided in the first place by the teacher. Appeal should lie to the principal of the school, and from him to the superintendent, and thence to the board of education.

19. There should be no compulsory education law.

O. T. CORSON, *State Commissioner of Common Schools*, Columbus, O.

1. It is my opinion that the schools can be best managed by a board of education composed of from three to seven members (depending upon the size of the city) elected by the people at large. I am fully convinced that this board should have upon it members of the two leading political parties, but I do not believe that it is best to have an even number on the board, half selected from each political party. In such boards the tendency is to divide on political lines and tie upon very important questions relating to the management of the schools. The object should be to elect men of such breadth of mind and integrity of character that the question of politics will not at all enter into the management of the schools.

7, 8. The superintendent of schools should be elected by this board of education for a term not to exceed three years. Such a superintendent should have a combination of scholarship and business tact. He should have been, prior to his election, a teacher of several years of experience in the different grades of school work, and thus be enabled to act intelligently in his selection of teachers, and to enter into hearty sympathy with them in their many difficulties.

9. He should be appointed as before stated, and be responsible to the members of the board of education, and through them to the people by whom they are elected.

10. The authority to license teachers should be vested largely in the superintendent of schools; but, in my judgment, he should not have entire control in this matter. This authority can be given to him by making him a member of the city board of examiners under the present law in this State. This board should both license teachers and also have the power to cancel licenses for just cause.

11. The superintendent should be consulted in the appointment of teachers, and should, under ordinary circumstances, be permitted to make his own selections. The power to discharge should be in the hands of the board, the members of which should always be ready to act promptly upon satisfactory evidence furnished by the superintendent that a teacher was unable to do good work.

12. The superintendent should have the power to assign teachers to their different grades after they have been selected.

13. "Whether the principle of competitive examination should be introduced in determining promotions to positions of greater responsibility or emolument," or not, depends entirely upon what is meant by examination. If the examination is one of scholarship alone, I should answer no; if it means the broader examination which will determine general ability to assume greater responsibility, then I think the principle a correct one.

14. It is my firm conviction that the principals of the different buildings should act in the same capacity as the superintendents of our smaller towns and cities. They should thoroughly inspect the work of the different grades, give suggestions to teachers, do some teaching themselves, and in every way bring up the general standing of the schools. It is an admitted fact that some of the best

schools in the United States are found in some of these small towns and cities, in which the schools are under the control of an active, enthusiastic superintendent. The city superintendent should then have a general supervision of these principals or assistant superintendents. He should determine very largely who the principals should be, hold them to a strict accountability for the success of the work in their various buildings, and consult them very freely regarding the selection of teachers who are to work with them, the promotion of pupils, etc.

15. The course of study should be made out under the direction of the superintendent. In this work he should freely consult the teachers of the various grades regarding the work to be done, and should insist that no *special work* should be permitted to interfere with the *general work* of the schools.

16. Text-books should be selected by a committee composed of teachers and members of the board of education. It might be well to have two of the best teachers, two of the most intelligent members of the board, with the superintendent of schools as chairman of the committee.

17. Promotions cannot be justly made by any *one power*. Of course, the superintendent should decide doubtful cases after gaining all the information possible, or, rather, he should direct principals how to decide in such cases. Teachers should be freely consulted regarding this important work; not only the teachers from whom the pupils are to be promoted, but also the teachers to whom they are to be promoted. While pupils should be given due credit for the regular daily work of the school, it is my firm conviction that at least three written examinations should be held each year in all grades from the third to the highest.

18. As a rule, I believe that disputes between parents and teachers can be settled satisfactorily without appealing to either principals or superintendent. There may be instances, however, when it may be necessary for the principal to settle such disputes; there may also be very rare instances in which the superintendent should take a hand in the settlement of the difficulty; and there may be an occasional case (there should be very few) in which it will be necessary for the board of education to act upon the report of their committee of discipline, after having carefully investigated the whole difficulty.

19. The compulsory education law should be enforced as provided in the Ohio law. One or more truant officers should be selected, who should act directly under the supervision of the superintendent and principals of the schools.

CHARLES W. ELIOT, *President of Harvard University*, Cambridge, Mass.

1, 4, 5. The central governing body should be a board of moderate size, appointed by the mayor. The number of members should not exceed ten. It might be composed of ten members two to be replaced each year, or of seven members one to be replaced each

year, retiring members to be eligible for a second term and no more. The members should receive no compensation. In this board should reside the ultimate authority over everything connected with the schools. It should have authority to appoint such agents, officers, and teachers as it might find expedient, and to assign the duties and fix the salaries of all persons employed in the school system.

Its principal agents should be a superintendent, a business manager, and an architect. These officers, and all principals or head masters, should be appointed directly by the board. Although all appointments, regulations, and programmes within the school system should have the authority of the board, the board should be empowered to delegate portions of its authority to its agents at its discretion, with or without requiring formal approval by the board of its agents' action.

The pecuniary resources of the board should be of two sorts: (1) for annual charges, including repairs and improvements, a fixed percentage of the total tax levy for current municipal purposes, this percentage to be in the first instance determined by the actual average ratio of current school annual expenses to other current municipal annual expenses for the five years preceding the date of this determination, the percentage thus arrived at to be alterable after six months on the proposal of the board, approved by popular vote at the next municipal election, a majority of two-thirds being required; (2) for new grounds and buildings, the product of long loans to be issued by the municipality on the proposal of the board, approved by popular vote at the next municipal election, a majority of two-thirds being required.

The superintendent, the chief officer of the board, should have authority to nominate for appointment by the board an adequate number of inspectors, and these inspectors should be appointed, not with reference to localities or sets of schools, but with reference to the departments of instruction in which they are respectively expert and which they are therefore competent to supervise; and the board should not be confined in their choice to nominations by the superintendent. The number of inspectors should be determined by the board with due reference to the size of the system. The tenure of the superintendent and inspectors should be during good behavior and efficiency.

The superintendent and inspectors should constitute a body, presided over by the superintendent, holding weekly meetings, and charged with important functions. The several inspectors should make annual reports to the superintendent, and the superintendent an annual report to the board; and all these reports should be annually published.

11. All teachers, except principals or head masters, should be selected, promoted, and discharged by the superintendent and inspectors acting as a body, first appointments being as a rule open only to persons who have passed general and special examinations conducted by the superintendent and inspectors, the records of these examinations to be for the use of that body only. Certifi-

cates may be given in general terms for use elsewhere. Experienced teachers, and graduates of colleges, scientific schools, or universities, should be eligible for positions without examination and with constructive rank to be determined by the superintendent and inspectors.

After reasonable periods of probation—periods which should ordinarily cover at least eight years for persons who enter the service at the lowest grade—the tenure of all teachers should be during good behavior and efficiency.

All the teachers in the system should be *ex officio* members of an association, one of whose functions should be to elect annually from their own number members of a representative body, to be called the council. The school board should determine from time to time the number of members of the council, and the proportion of this number which should be replaced each year. The membership of the council should be fairly stable, and not so numerous as to make intimate and effective discussion difficult.

All school programmes should be constructed by the superintendent and inspectors with the advice of the council; but decisions should be made only after ample opportunity had been afforded to the council for discussing and criticising the proposals of the superintendent and inspectors.

16. For those grades in which uniform text-books are necessary, the selection of books should be made by the superintendent and inspectors with the advice of the council. For those grades, or in those subjects, in which various text-books may be used with advantage, or for which books of reference are needed, the principals of schools should make the selection.

17. Promotion of pupils should be determined by principals of schools on a general plan made by the superintendent and inspectors with the advice of the council.

Annual appropriations, reasonably constant in amount, should be made by the board for each school for the purchase of books, apparatus, and supplies, all such purchases to be made through the business manager on the order of the principal of the school.

The business manager, a salaried officer, should buy all supplies, oversee all the service in school buildings, direct all repairs and improvements which can be executed without the aid of an architect, and in general be responsible for the condition and the care of all grounds, buildings, and other property belonging to the system.

The architect should not be a salaried officer, but should be paid for designs, drawings, specifications, and superintendence, by commissions, computed in accordance with the customary charges in private practice.

I add a few remarks on the above plan, without attempting any elaborate argument in support of it.

Appointed boards, serving without pay, have proved to be independent, efficient, and trustworthy; as, for example, boards of health, trustees of libraries, park commissioners, and hospital trustees.

The resources of the school board should not depend on votes of the city council, and should rise and fall automatically with the general expenditure for city purposes.

The superintendent and inspectors would be a body of experts qualified to administer the school system in all its details.

The council would be an advisory body through which the opinions of the teachers about programmes, pupil promotions, books, and methods, could be officially brought to bear on the superintendent and inspectors.

Precedents already exist for almost every feature in the plan.

CHARLES B. GILBERT, *Superintendent of Schools*,
St. Paul, Minn.

My present judgment is in favor of a board of education of not more than five members, elected by the people from the city at large for long terms, say five years, making one election each year. Of these five, provision should be made that not more than three shall belong to one political party.

This board should appoint the city superintendent for an indefinite term, subject to removal for cause, and the law should require that the city superintendent be a man of liberal education and professional training or experience. If the State authorities have anything to say about it, it should be simply to certify to these qualifications. I have little faith in State educational authorities as a whole. The authority to license teachers should rest in the superintendent, with an advisory committee of the board. The authorities who issue a license should also have the power to cancel it for cause. The superintendent should have the power to appoint and discharge teachers. I am uncertain whether it would be wise for the board to have the power to confirm or not.

Teachers should be assigned to grades in the school by the principal of the school, after consultation with the superintendent.

The plan of competitive examination does not seem to me a good one.

The relative duties of superintendent and principal it would be impossible to define fully in a short statement. In general, the superintendent should determine the general methods of work and the principles to be employed, and to the principal of the school should be left their development.

The course of study should be made by the superintendent. Text-books should also be selected by him.

Promotions should be made by principals in consultation with their teachers.

Disputes between pupils and the teaching force should be referred to the superintendent.

The superintendent should also have the supervision of the enforcement of the compulsory education law.

In regard to boards of education, it is my opinion that their duties should be broad but not specific. They should have power to fix upon a schedule of salaries, and to determine in a general

way what funds are required for the running of the schools, and how they are to be expended; what buildings are to be erected; what supplies purchased. They should appoint a superintendent, who should have entire control of the educational work of the schools. They should appoint another man, or two if necessary, who should attend entirely to the business side, such as the purchase of supplies, erection and care of buildings, appointment and supervision of janitors, relieving the board of those duties which are burdensome to business men, and which boards always do badly.

I think with some such plan as this we could have better boards than are common, and be free from the peril which I feel rests in the absolute power of the commissioner. I am aware that it is a prevalent opinion that the members of the board should be appointed by the mayor, and not elected by the people, and possibly I am wrong in my opinion; but I certainly have not yet seen an instance of the continued successful operation of one-man-power in this country—that is, of one man responsible directly to the people—and I doubt whether the United States is congenial soil for such a plan.

PAUL H. HANUS, *Assistant Professor of the History and Art of Teaching*, Harvard University, Cambridge, Mass.

1. A board of education.

2 and 3. Answered in 1.

4. For cities comprising one hundred thousand inhabitants, or fewer, the board of education should consist of five members; for larger cities, the board of education should consist of a somewhat larger number, say, seven, nine, or eleven—never more than eleven.

5. (1) Appointed by the mayor at stated times, as remote as possible from the city elections. (2) From the city at large. The desirability, when such desirability exists, of having all sections of the city represented, would naturally be urged on the mayor; but he ought not to be obliged to select the members of the board from localities having fixed boundaries.

6. Electing or appointing the members of the board of education in equal numbers from the "two great political parties" will not eliminate politics from school administration. On the contrary, to recognize the existence of political parties in connection with the appointment of members of the board of education—a matter with which politics has absolutely nothing to do—is to affirm a relation between them, which afterwards has to be considered.

There are, fortunately, some cities in which politics does not enter into the administration of school affairs. Throughout the country, wherever political influence is felt in the administration of school affairs, every effort should be made by the superintendent, and all worthy citizens whose co-operation he can secure, to cultivate public opinion in favor of the complete elimination of political influence from school affairs. It should be universally recognized that a candidate's political opinions have absolutely nothing to do with his qualifications for membership in the board of education. The

question of his politics, so long as he is a man of good character, ought never to be raised either for or against any candidate.

7. By the board of education, at first for a probationary term of two years; then for a longer probationary term, say five years; thereafter (for a term without stated limit) during efficiency and good behavior.

8. He should be a man of character, refinement, scholarship (he should have a college education, at least), professional training (collegiate or university study of education), and successful experience as a teacher or supervising officer, or both.

9. He should be appointed by, and should be responsible to, the local authorities.

10. (1) In the superintendent. (2) In the superintendent, with the right of appeal to the board of education.

11. (1) The board of education should elect the superintendent and a business officer. The business officer should be the business agent of the board, the executive head of all its financial or business affairs. The superintendent should be free from all administration of business affairs in order that he may devote himself to the administration of the work of instruction of which he is the executive head. The superintendent should appoint all assistant superintendents, principals, and teachers. (2) In the superintendent, with the right of appeal to the board of education.

12. The principal of the school.

13. No. Promotions should be determined by proved efficiency; in cases of equal efficiency, by seniority of service.

14. The assistant superintendents and principals, together with the superintendent as leader and presiding officer, should constitute a professional advisory council. In this council the superintendent should occupy about the same relation to the other members that a college or university president bears to the members of a faculty. He should have the right to propose measures, and to recommend and debate measures proposed by other members of the council. He should have the power to enforce any measure favored by a majority of the council, and no measure should be adopted without his approval. In their own buildings principals should administer their schools without interference. The right of the superintendent to inspect, criticise, and advise the assistant superintendents and principals in regard to their teaching or administration, or both, should, however, be definitely understood: the superintendent is the executive head of the school system in everything that pertains to the work of instruction; the assistant superintendents and principals are his subordinate officers. It should never be forgotten, however, that the principle of all official relations between the superintendent and his subordinates should be *co-operation*.

15. By the Advisory Council defined in 4.

16. By the Advisory Council defined in 4.

17. By the teachers of the classes and the principals of buildings without special examinations for promotion. Such examinations should be resorted to only in disputed cases.

18. All disputes between parents and teachers should be reported

by the teachers concerned to the principal, at once, and all minor disputes should be adjusted by the teachers and parents directly concerned, with the co-operation of the principal whenever such co-operation is desired by either party. If the teachers, parents, and principal fail to agree, the co-operation of the superintendent should be sought; and whenever the matter in dispute is important, the superintendent should be fully informed from the start whether his co-operation is required or not. If no agreement can be reached through the superintendent's co-operation, the dispute should be carried by the parties concerned—*i. e.*, parents, teachers, principal, and superintendent—to the board of education.

19. By the local authorities through special officers elected by the board of education on the nomination of the superintendent.

WILLIAM R. HARPER, *President of the University of Chicago*, Chicago, Ill.

1. Commissioner without advisory council would be better; more definite policy. But a board is better.

2. Appointed by mayor. More definite responsibility.

3. I. *Financial.* Fixes school budget; fixes salaries; audits accounts; gives orders on the treasurer for same.

II. *Educational.* Appoints teachers on recommendation of superintendent; promotes teachers on recommendation of superintendent; dismisses teachers on recommendation of superintendent; fixes curriculum on recommendation of superintendent; fixes text-books on recommendation of superintendent.

4. Not less than five nor more than thirteen.

5. Appointed from city at large.

6. I do not approve of a bi-partisan board. It is worse than any other, so far as the spoils system is concerned. It should consist of men of such character that the board will be really *non*-partisan. I do not believe that any machinery will make a school board non-partisan. Nothing can do that but such a state of public opinion as necessitates the appointment of such men as school commissioners as will be above partisanship.

7. By the school commissioner, or by the school board. Term, good behavior.

8. It would be easier to say what they should *not* be. He should be a man (1) of comprehensive education, liberal and professional; (2) of wide and successful experience in instruction and school management.

9. No.

10. Concurrently in the State and in the city board of education, with approval of superintendent.

11. In the board, with approval of superintendent.

12. The principal.

13. Yes, but it should not be the sole criterion. The personal equation should decide first who should be admitted to such examination.

14. The superintendent should deal with general questions; principals, with details.

15. By superintendent and principals, with reservation of veto to board in case of added expense.

16. Same as 15.

17. By board, on recommendation of superintendent and principal; or, in care of principal, on recommendation of superintendent.

18. By the superintendent, with right of appeal to board.

19. By the board.

F. A. HILL, *Secretary of the State Board of Education*, Boston, Mass.

1. There should be a board of education, whose functions should be as nearly legislative as possible.

2, 3. See answer to No. 1.

4. The number of members should be small. The term of service should be at least three years. One-third should go out each year.

5. The members should be elected by the people at large.

6. Political parties ought not to be considered in their election. Only the good sense of the public can eliminate politics from school administration.

7. The superintendent should be appointed by the board, to serve during efficiency.

8. He should be liberally educated, have a practical interior acquaintance with schools, be tactful, have the qualities of leadership, etc., etc.

9. The superintendent should be responsible to the local authorities.

10. The superintendent should have the initiative in matters of licensing teachers and canceling licenses, the board serving as a final court of appeal.

11. See answer to No. 10.

12. The head master should have the power of placing teachers within his jurisdiction or field of work.

13. If the idea of a competitive examination includes the whole subject of fitness, personal, scholastic, professional, and executive, and is not limited to paper results, it is an idea to be favored. The *best* men should go up, and the selection of the best men involves the comparison of men. A plan of some kind that shall aid in arriving at wise selections is certainly desirable.

14. The superintendent deals with general policies; the principal should be free within the limits of general policies and in his own field.

15, 16, 17, and 18. The superintendent and his aids should control courses of study, the selection of books, apparatus, etc., promotions, the settlement of disputes between parents and the teaching force, etc.; that is, the initiative and first decisions should come from his office, the board acting in cases where ultimate

decisions rest with the board by law and serving as a final body of appeals and decisions

19. The compulsory laws for education should be enforced by truant or other officers, responsible directly to the superintendent, and finally to the board.

The underlying principle of the foregoing answers is this:

A board of education should confine itself to legislative functions, to questions of school accommodations, amounts of money needed, salaries, the grander policies of education, etc. Its members are presumably not specially qualified, and usually it is physically impossible for them, to attend wisely to details of administration or to the settlement of purely professional questions. Everything of an executive nature, and everything that, in administration, concerns the wise and successful pedagogical treatment of school matters, should be intrusted to the superintendent, who should have associates and helps enough to do the work. One function of a board is to back up and support a superintendent in a vigorous policy.

In other words, all matters of an educational nature that require expert consideration should be relegated to a competent, well-paid executive expert, who should have the aid of other competent, well-paid experts. Their decisions in the matters intrusted should usually be accepted and supported. They may refer questions of doubt to the board, and the board should always be viewed as the place for appeals and the source of all authority, under the laws.

These views I hold in a tentative way—not as absolutely final ones—for I may not be wise in proposing details of a general policy that I firmly believe in; namely, the policy of centering purely educational responsibility in educational experts, so paid, of such tenure, and so supported by a wise board behind them, that is content with its general control of great policies, and its ultimate control, in cases of appeal, in all matters, that experts shall not shrink from a fearless policy.

B. A. HINSDALE, *Professor of the Science and the Art of Teaching*, University of Michigan, Ann Arbor, Mich.

Before proceeding to answer the questions, I wish to observe that it is difficult or impossible to answer them in absolute and unqualified terms. What is best for one city or town is not necessarily best for another. It is not the American, or rather the Anglo-Saxon, way to take the high *à priori* road, but rather to take causes and conditions, particular as well as general, into account. Hence it must be understood that I should by no means be bound by the following answers in all cases. In other words, the answers will relate to what I conceive to be average conditions.

1. I incline to the commissioner with an advisory council. In this way power, and especially responsibility, is focalized, which is a very important thing in public-school matters.

2. I incline to the popular election of the commissioner, as being more consonant with the spirit of our instruction.

3. His powers and duties should be executive and administrative, not legislative or judicial.

4. I incline neither to a large board nor to a small one. A small board creates suspicion and often promotes scheming. A large board tends to become too irresponsible and reckless. What I have said about boards will apply as well to advisory councils. There is, in my mind, even more objection to a large board than to a large council, because the board will be charged with executive and administrative duties to a much greater extent than the council.

5. On the whole, I incline to appointment, as, for example, by the judges of the courts. I see no objection to both city representation and district representation. If the members are to be elected, I incline to city representation.

6. This would be desirable, but I see no way to bring it about except through the operation of public opinion. Such a division as is referred to could hardly be secured by means of positive laws. If leading men in the two political parties would agree to it, and see to it, as was formerly the case in Minneapolis, as perhaps is yet, the end could be accomplished.

7. If there is to be a commissioner and council, the commissioner should nominate and the council confirm. If there is to be a board, the board must elect. The term of office should be good behavior, or if it has a time limit it should be a long one.

8. If there is a commissioner and council, so that the city superintendent will be relieved of many business matters that sometimes fall to him, I think it very desirable that the superintendent's strength should lie on the pedagogical side rather than on the business side. Still he must be a man of good business and administrative sense. His great functions I conceive to be pedagogical.

9. I should answer this question decidedly in the negative. It is contrary to our cherished ideas of local self-government, and would, in my opinion, promote evil rather than good. I am unable, however, to say how the State system operates in Virginia, where it prevails.

10. The licensing authority and the canceling authority should be the same. I think it would be a good plan to put the nomination of examiners in the hands of the superintendent, and the confirming authority in the hands of the board or council. One great need in our schools is larger professional influence in the licensing of teachers.

11. The power of appointment and the power of discharging should be the same. I like the Cincinnati and Cleveland plan. If this cannot be secured, then the board must elect; in no case should the commissioner, if one, appoint

12. The assignment should be made by the superintendent, acting in conjunction with his assistants.

13. Something can be said on the affirmative side of this question. However, competitive examinations test only scholarship and thinking ability, and as these are by no means the only elements entering into the appointment, the test would not be sufficient. Still I

am inclined to think that competition could be usefully employed to a limited degree.

14. An adequate answer to this question would require a magazine article. I can only say that the ultimate source of instruction in regard to methods and teaching must be the superintendent. Still the principal should have a distinct status. Teachers should have some measure of responsibility to the principal, but I should strongly oppose a system that would preclude the teacher from reaching the superintendent, or the superintendent from reaching the teacher, save through the principal. The teacher should have a double loyalty and a double patriotism, much as the American citizen owes loyalty to the State and the nation.

15. Courses of study should be formally made by the board or council, but they should be really made by the superintendent, assisted by his advisers.

16. I answer this question in the same terms as the fifteenth.

17. Promotions should be made by principals, acting in conjunction with teachers on the one side, and the superintendent and his assistants on the other.

18. That will depend upon the nature of the dispute. Many disputes can be settled directly by bringing the parent and the teacher together, but some cannot be so settled. In this second case, the settlement should be effected, as a rule, by the parent and the superintendent, not by the parent and the principal; still there will be cases when the intervention of the principal will conduce to good results.

19. I know of no better way than for the school authorities to appoint, under the law, a school police, not using that name, however. Information must come, of course, from the superintendent's office directly, but ultimately from the teachers. The truant officer, or school policeman, should be in constant close connection with the superintendent's office.

D. L. KIEHLE, *Professor of Pedagogy*,
University of Minnesota, Minneapolis, Minn.

1. The essential to an efficient organization is one mind capable to comprehend the entire system—capable in intellect and administrative ability. To meet the demands of details he should have an advisory board. Hence I believe in a commissioner.

2. He should be appointed in a deliberate manner by some responsible authority. When our cities elect mayors in the spirit of municipal reform, they will be well fitted to make the appointment.

5. The members should be comprehensive in their intelligence and sympathies. In such case there would be no necessity for electing by districts.

6. The selection should be without formal recognition of political parties.

7. The superintendent of schools should be carefully selected. This cannot be done by elections or caucuses.

8. Besides his scholastic preparation, he should have a theoretical

preparation well tested by experience. He should know men, and be well able to administer educational affairs in the selection of teachers, and in supporting and improving those in the service.

11. The nomination of teachers should be with the superintendent, the same to be appointed or confirmed by the board.

12. Appointment or assignment to grades must be left with the superintendent.

13. Such examinations should be made as will determine fitness. Mere scholastic tests are not sufficient.

15. Courses of study should be made by some one representing the wisdom and experience of the entire corps and profession of teachers. This means the experience and thought of the educational world adapted to the needs of a particular community. The city superintendent should be capable of this.

16. Persons capable of using tools ought to be capable of selecting them.

17. Persons capable of teaching ought to know when their work is done, or, in other words, should decide promotions. Of course, there must be an equalizing agency, to make up for the defects of teachers.

18. By the superintendent.

19. By some authority independent of the educational.

COLONEL FRANCIS W. PARKER, *Principal of the Cook County Normal School*, Englewood, Ill.

1. A board of education.

2. Elected by the people at large at a time when there is no other election.

3. To select a superintendent capable of managing a city school system. The board should be able to judge of the ability of the superintendent and of his work, and should support him in all that he tries to do, so long as they are satisfied that he is equal to the work.

4. Five members.

5. Elected at large from the city on one ticket. It would be a good plan to elect one member each year.

6. The election of boards of education should be entirely separate and apart from party politics. Members should be selected for their business ability. By "business ability" I mean men who have the sound judgment and common sense to select a competent manager or superintendent, and to support him while in office.

7. By the board of education, for a term of not less than five years.

8. A man or woman of excellent education; not necessarily a graduate of a college or university. Should have a thorough professional education; a practical teacher, if possible. If not a teacher, should have a comprehension of the science of education, and know educative work when he or she sees it. The principal function of a superintendent is to select and *teach teachers*.

9. The school affairs of a city should not in any way be managed by the State authorities. The common schools should depend upon the people who pay the money for their support.

10. In the superintendent.

11. Principals should be allowed to nominate teachers from a selected list made by the superintendent. A request to discharge a teacher on the part of the principal should be final. Either the request should be indorsed or the principal discharged. All power to appoint and discharge teachers, however, should be vested in the superintendent.

12. The principal of the school.

13. All promotions of teachers to better salaries and more responsible places should be made upon *merit* alone ; there should be *no* competitive examinations. Merit should be decided by actual teaching.

14. The principals should be the advisory council of the superintendent ; the superintendent should supervise the principals, and the principals should supervise their own schools. A principal should be, virtually, supervisor of his own school, and the superintendent should decide, by examinations and inspections, whether he is capable of doing such work.

15. By the superintendent, with the principals as his advisory council ; the principals, in turn, should take and consider the advice of their teachers.

16. By the superintendent, under the advice and counsel of his principals.

17. All promotions should be made by the teacher of a class or grade.

18. By the principal of the school, with an appeal to the superintendent.

19. By the principal of a school, aided by all his teachers, and supported by the superintendent. All truant officers should be under the immediate control of the superintendent.

The whole question of school supervision, as in all other business operations, may be summed up in one word, "*responsibility.*"

HENRY R. PATTENGILL, *State Superintendent of Public Instruction*, Lansing, Mich.

1. I think I am in favor of a board of education.

4. This board should not be a large one—say six or eight for a large city.

5. I would have the members elected by the people at large.

6. I would have the arrangements so made that two should be elected each year—one from each of the two principal parties—and the person so chosen should be nominated in district caucuses conducted on the most approved and modern plan ; that at these caucuses members of any political parties could vote, but that it should be understood that the person selected should belong to the Republican or Democratic party, or some other party, in accordance with

the situation of the political wheel at that time. That is to say, all that vote should vote to nominate some Republican one year, and a Democrat the next year; but when nominated these names should be placed upon both the tickets, Republican and Democratic. This plan has been tried in Lansing for several years, and works very satisfactorily. Politics do not enter into the choice of our school board. Ours, however, are chosen by wards. The citizens of the ward assemble in caucus and vote for a member of the school board to be placed upon the ticket, one party having it one year and one the next. Both parties by agreement abide by the decisions of these caucuses.

7. The superintendent of schools should be appointed by the school board for life or good behavior.

8. The city superintendent should have a thorough education, be a man of excellent business ability, a man of unusual common sense, possessed of genial manners, and having the power of inspiring and encouraging teachers to do good work.

9. No.

10. In a committee from the school board and the city superintendent, their examination questions and methods of examination subject to the approval of the State superintendent of public instruction. The power to cancel licenses should be held by the body that grants the license.

11. The city superintendent should be the power to appoint teachers and the power to discharge.

12. The superintendent, in conference with his principals, should be the power to assign teachers to grades or classes.

13. Yes.

14. The city superintendent should have the general charge of the affairs of the schools, and be seconded in his efforts by the principals, who in turn should have charge over the individual schools over which they are appointed. Principals should be held responsible for the work done in these schools, and should be subject to the guidance and direction of the city superintendent.

15. The course of study should be made by the superintendent and principals working conjointly.

16. Text-books should be selected by superintendent and principals.

17. Promotions should be made by the principals, subject to approval of the city superintendent.

18. Disputes between parents and the teaching force should be settled by principals, with power of appeal to the city superintendent.

19. Compulsory education laws should be enforced by the school board, placing the executive duties of the office in the hands of a truant officer who is not a member of the police force, who receives a compensation by the day, and the law should be so arranged that the parent or guardian who fails to comply with its provision may be subject to a fine or imprisonment. It should be made the duty of the board to appoint a truant officer.

J. G. SCHURMAN, *President of Cornell University*,
Ithaca, N. Y.

In reply to questions 1–6, I would say that, in my opinion, there should be provided for every city school system a board of education, and that such board should consist of a large number of members in order to prevent manipulation which might bring it under the control of one man or one faction. In a city of twenty thousand I should think twelve members the minimum, and in larger cities, where the population is counted by hundreds of thousands, I should not think a board of fifty or sixty too large. In my opinion, the members of this board should be elected by the people and hold office for a considerable length of time—three or four years at least. They should not all retire at the same date, but a fraction of the number—say a third or a fourth—should go out annually. These members should, I think, be chosen to represent both districts and the city at large. This dual system would secure the consideration of local wants and peculiarities, and at the same time the well-being of the city schools as a whole. In reply to the sixth question, I must state what will sound like a paradox in theory ; namely, that, in order to keep politics out of the schools, the members of the board should be elected in equal numbers from the two great political parties.

In reply to questions 7–9, I think the superintendent of schools should be appointed by the board, not elected by the people, and that his term of office should be during good behavior. The most important qualification of a city superintendent is, in my opinion, the capacity to select good teachers. He has, no doubt, other duties, but, however well he fulfills them, the city schools will be a failure unless they have been supplied with good teachers. With good teachers other defects may be overcome. I do not think that the city superintendent should owe his appointment directly or indirectly to the State authorities, or be responsible to them rather than to the local authorities.

In regard to question 10, I hold very strongly to the opinion that teachers should be licensed by the State. If the profession is to enjoy the dignity of other professions—say the law—there should be uniform tests for admission to it, and candidates who pass them satisfactorily should enjoy the privilege of practicing their profession and be eligible for appointment in every part of the State. If a State board licensed teachers, it would also be their duty to cancel licenses for cause, which cause would, however, be reported to them by the city superintendent.

In reply to questions 11–13, I think the appointment of teachers should be in the hands of the board of education on the nomination of the superintendent. Should the board of education refuse to act on the nomination of the superintendent, or appoint other candidates, the breach between the superintendent and the board would be irreparable, and the superintendent would be forced to resign. The preceding holds true also with regard to the discharge of teachers. The superintendent should assign teachers to grades

or classes ; this is a matter with which the board has nothing to do. The principle of competitive examination should, in my opinion, not be introduced in determining promotions to higher positions. Worthiness of promotion in the teaching profession depends upon so many circumstances, the character of which cannot be evaluated by examination papers, but which can be intuitively observed and estimated by a competent superintendent, that I should have no hesitation in rejecting the competitive method of promotion and trusting the subject to the superintendent. If it seems like giving him large powers, I answer it is in the main for the exercise of such powers that that official exists. The office of the superintendent adds to the mechanism of the school system the infinite value of personality, and we must be careful in all our regulation of the subject not to contradict the end for which the office exists.

In reply to question 14, I should say that no definite answer can be given. Superintendent and principal must work together. And in dealing with the principal the superintendent should make his power just as little felt as possible. The consciousness of the principal as responsible head of the school should not be disturbed. On the other hand, the supreme power of the superintendent need not be abandoned.

In reply to questions 15–19, I would say that, in my opinion, courses of study should be made by the superintendent, but approved by the board of education, and similarly also with regard to the choice of text-books and with promotions. As to disputes between parents and teaching force, they should be settled by the superintendent, with the reservation of the right of appeal to the board of education. A compulsory education law should be enforced by the superintendent with the aid of the police.

CHARLES F. THWING, *President of Western Reserve University*, Cleveland, O.

1. A commissioner, with an advisory council. Reason, centralization of responsibility.
2. Appointed by the mayor. Reason, centralization of responsibility.
3. Full responsibility for the conduct of the educational system.
4. Answer superfluous, by reason of answer to No. 1.
5. Answer superfluous, by reason of answer to No. 1.
6. Create a public spirit, which shall allow members of any advisory council to be chosen upon character and ability, without reference to partisanship.
7. Let the superintendent of schools be appointed by the commissioner or by the mayor. I should make the term not less than four years.
8. He should know everything, and be able to do everything, pertaining to the public schools ! !
9. Better to make their responsibility to the local authority.
10. In the superintendent, in both instances.

11. In the superintendent, in both instances.

12. In the superintendent, ultimately. He may use the principals of the schools in securing knowledge.

13. No. Let continued work be the test.

14. Let the superintendent have the responsibility, and let him divide the supervision, as his judgment dictates.

15. By the superintendent, and by him calling to his aid any one and every one who can give to him the least help.

16. Same answer as given to No. 15.

17. By the superintendent.

18. By the superintendent.

19. By the commissioner.

These answers are based upon the general proposition that the superintendent is to be responsible and the efficient head. Through this principle, I think, we get better results than through any other.

E. E. WHITE, Columbus, O.

I do not believe there is even an ideal school system equally adapted to all conditions. The best system for one city, with its school history and limiting conditions, may not be the best system for another city. I am not sure that the same system would be equally well adapted to cities of like size in different sections of the country. An ideal system for a city in New England might not be the best possible system for a city in the West or in the South. Past as well as present conditions and influences should always be considered in school legislation. Certain legislation may be required to correct evils that have intrenched themselves in school administration, and this legislation may be very unwise under other and different conditions.

I may also add that I have little faith in the ultimate success of any school system that is placed beyond the reach of the people. Their will in school affairs is sure to be law, and when school administration loses the confidence of the people, they will find a way to change it. The true end, as I see it, is to provide such a system of school administration as will win and hold the confidence of school patrons.

Please excuse the brevity, and also the uncertainty of some of my answers.

1. There should be a board of education, and also an executive officer having charge of the business department of school affairs, and a superintendent of instruction having charge of the schools proper. The general duties and responsibilities of each of these executive officers should be defined *by State law.*

I am inclined to think that the head of the business department should be appointed by the board of education, for not less than five years, and that his acts should be subject to the approval of the board. If, however, he is to be supreme in school affairs, and the board only an advisory council, he should be elected by the people.

In general terms, he should be the executive officer of the board

in all business affairs, and his duties should not be left to the board, but should be defined by the law creating the office.

4. The number of persons constituting the board will depend much on conditions. As a rule, the board should not consist of less than five members, nor more than fifteen. More will depend on the *fitness* of the members than their number.

5. Cannot answer definitely. There is probably no "best plan." That plan is best which works the best, and only experience can settle this. In one city, the election of school directors works well; in another, it is the source of evil. In one city, the appointment by the mayor secures good men; in another, it fills the board with politicians, possibly the partisans of the mayor. I am inclined to think that the election of members by districts works better in most instances than their election by the city at large. But the districts should not correspond with wards, so often run by ward bummers.

6. I wish I knew how to organize a city school system *in touch with the people*, and yet free from the control and corruption of party politics. I would at once get the plan patented, and retire from hard work! I think that a school board should not be exclusively composed of men of one political party, and this is the basis of my objection to the election of the members on a general ticket. No school board ought to be organized on political lines. But I leave this question to the wisdom of the Committee of Fifteen.

7. Much will depend on the responsibilities and duties of the superintendent. If he is to be the real supervisor of school work, he ought to be appointed for not less than five years, nor more than ten I doubt the wisdom of appointing superintendents for life. Few men can successfully supervise a system of schools more than ten years, and fewer more than twenty years. They are too often unable to see real defects in their own schools, or to devise plans for their correction. The schools fall into ruts. All depends, however, on the qualifications of the superintendent. The best method of appointing a superintendent I leave for the committee to determine.

8. A school superintendent should be a Cæsar, a Solomon, and an angel, all in one person! Who can describe his make-up? As a supervisor of instruction, he should be a scholar and an educator, practically acquainted with the science and art of teaching. But I forbear.

9 I am not competent to answer this question. The experience of the country, with few exceptions, is in the direction of local control and management of schools in cities and towns. I see little hope of changing this, even if desirable, except by general statutes regulating local management.

10. The authority to license teachers should be vested in a board or committee of experts, not less than three in number, and these examiners of teachers should be confirmed and commissioned, if not appointed, *by State authority*. The superintendent may be a member of this licensing body, but, if he has the appointment of teachers, his relation to their licensure should be advisory. I do

not favor the investing of the superintendent with the power to license and also to appoint teachers. If the superintendent has not the power of appointment, he should be a member of the board of examiners or licensure.

11. The superintendent should be vested by law with the power to select and appoint teachers, and also to assign them to their positions. His appointments may be subject to the approval of the board, under specified limitations. The power to appoint should carry with it the right to discharge for cause, subject to the review of the proper court. The essential condition here is that the superintendent's power and duty in these directions should be clearly defined *by State law*, not by regulations of the school board. For a fuller answer to this question, I refer you to the inclosed paper on "School Superintendence in Cities."

12. Answered above.

13. I have not over-confidence in competitive examinations as a means of determining promotions to school positions of higher grade or emolument. Certain essential qualifications cannot be disclosed by a formal examination, or measured by a per-cent. scale. An examination is largely a test of knowledge, whereas success depends as well on ability and character.

14. In general terms, the superintendent should have charge of the schools as a whole, and the principal should be held responsible for the efficiency of the schools under his immediate control. Principals are local superintendents, acting under the direction and oversight of the general superintendent, and in harmony with determined plans and purposes. I cannot undertake a complete statement of the duties of each, much less their proper co-ordination.

15. The superintendent, with the assistance of associate superintendents and principals. It may be well to provide for the approval of the course by all supervisors acting as a body. Under present conditions in most cities, the course should be finally approved by the board of education.

16. The text-books should be selected by those who make the course of study, since they are essentially a part of the course.

17. Promotions within the grades under the direct supervision of the principal should be made by him. Promotions *from* one school or group of schools under a principal should be made by the superintendent on the judgment of teachers and principals, properly ascertained. I like, as you know, the plan of monthly estimates, with examinations for special cases.

18. Complaints by parents should first be made to the principal, and then, if desired, to the superintendent. It may be wise to provide for an appeal from the judgment of the superintendent in specified cases, but his decision should, in most cases, be final. When unsatisfactory, it may be well for him to seek its reference to a committee composed of competent persons.

19. I have no definite opinion on this subject.

I have thus tried to comply with your request by giving you "*running*" answers to all the questions. I would like to be more specific on the manner of the superintendent's appointment. This,

as I see it, will depend somewhat on the manner in which the board is organized. A school system should have two executive officers, one having charge of what may be called the *business* department of the system, and the other of the internal work of the schools, the *instruction* department. These should be *co-ordinate* officers, and neither should be appointed by the other. If the superintendent of instruction is appointed by the head of the business department, he is thereby put in a subordinate position, and *also his department.* It so strikes me, but this may be the *less* of two evils in a given city. If the board is not to appoint the superintendent, as well as the head of the other department, the selection and appointment of the superintendent should be vested in some outside authority, or he should be elected by the people.

The *special* reform in school administration needed is the differentiation of the department of school supervision and its investment with well-defined functions and powers *by State law.* See inclosed paper.

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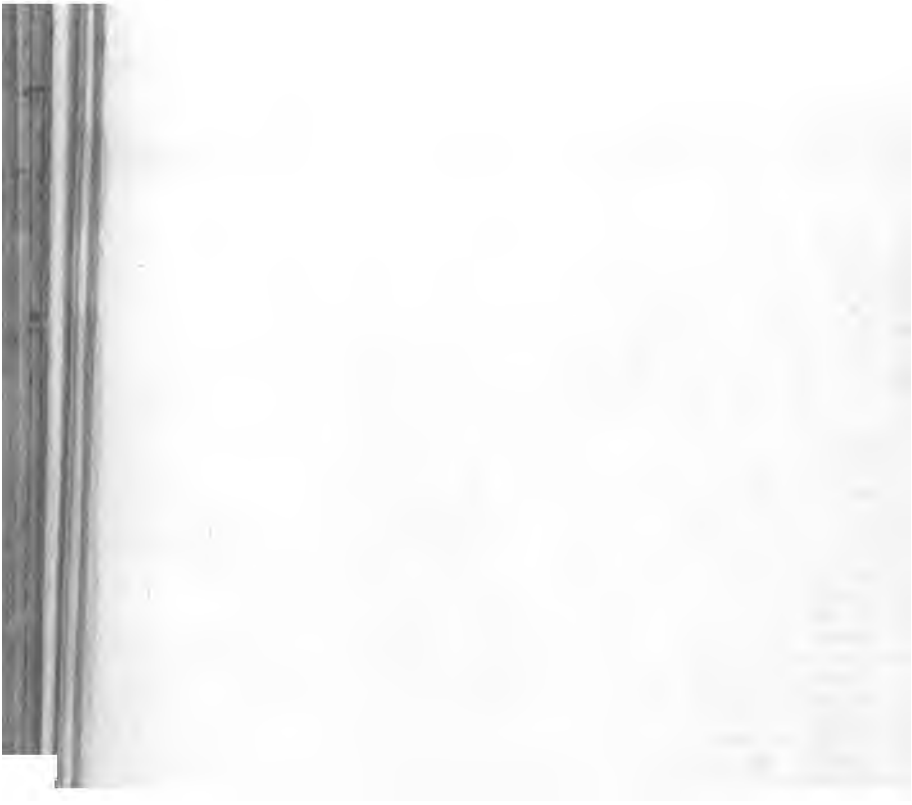

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